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SEVENTY-FIRST ANNUAL MEETING AND CONGRESS OF THE BRITISH VETERINARY ASSOCIATION

ABERDEEN, SEPTEMBER 6th to 12th, 1953

Presidential Address*

BY

A. M. GRAHAM, M.R.C.V.S.

LADIES AND GENTLEMEN:

I have been looking through some presidential addresses delivered in the past and find it has been customary for them to follow one of two paths.

They may be a review of the work carried out during the presidential year or they may take the form of an expression of opinion by the President of the trend of things to come and the ways along which he thinks the Association should travel.

Both of these themes have their attractions and I have had great difficulty in deciding which I should choose. Although attempting to forecast the future is the more fascinating and perhaps stimulating, my Scottish prudence warns me that I was not cast for the rôle of a prophet and I feel I would be on safer ground if I confined myself, partially, at least, to commenting on some of the happenings in the life of the Association during this presidential year, and then perhaps saying something of the developments which we have very much in mind. There have been some quite notable events since last we met, and I think they should be put before you in this address.

As you know, progress has always been one of the primary aims of the Association, and, during this Coronation year, we have endeavoured to keep this foremost in our minds. We may not have advanced in every direction as far or as fast as we would have liked but, without appearing to be too optimistic, I am fairly convinced that the general trend in the Association's affairs has been a steady movement forward.

This is due largely to the enthusiasm and energy displayed by most of our members whose unbounding faith in our future and determination to see that we do go forward permits of no other course. They have shown this by the solid support they have given to some of the ventures on which we have embarked within recent months, and it is about a few of these that I should like first to say something to you. Now what are the events in the life of the Association during this Coronation year which we will remember?

The first, without doubt of great domestic importance and interest to us all, is the acquisition of new headquarters. Events of this kind in the life of our Association have been very few and far between and always appear to synchronise with great national occasions. For it was in 1936, during the last Coronation year, that we moved into our present headquarters at Gordon Square. Our stay there for these 16 years has been happy and profitable. We have grown and prospered and we can look back with satisfaction and pride on our achievements during that time. We have to move because the lease has nearly expired. But the new home which we have purchased at 7, Mansfield Street, is a place of beauty and character and one well fitted to be the headquarters of the British Veterinary Association. Its acquisition on a 1,000 years' lease is a guarantee of our faith in the future well-being and advancement of the Association, and it is our earnest hope that our members will grow to love and enjoy it, and that it will duly become a real home for us all. We must remember, however, that the ownership of such a magnificent and dignified building carries with it heavy financial responsibilities and obligations, and that, if we are to maintain it as we would wish, we must have your full support and we must also increase our membership.

The achievements and work of this Association must, by now, be known to most members of the profession and, in whatever sphere they work, each one of them must have benefited from these efforts directly or indirectly at one time or another whether or not they belonged to the B.V.A. I do ask those people who are not members to reflect on this and ask themselves if it is right that they should make no contribution to the organisation whose sole aim is to look after their interests and welfare. In these days of unions and collective bargaining, no man or woman can afford to stand outside or aloof from his or her professional organisation, but there are still some in our profession who do, and I would ask them to reconsider their attitude and join us. They will soon find out the advantages of the meetings and informal talks with their colleagues and the benefit which they derive from reading, listening to, and participating in, the many papers and discussions which the Association and its Divisions provide. Above all, they will begin to appreciate the camaraderie and the help which membership ensures.

Another matter of which honourable mention must be made was the most successful and valuable conference on Metabolic Disorders and other problems related to Grassland and Fodder Crops, and innovations in Animal Husbandry, which was sponsored and organised by the Association. This was the second conference of its kind for which the B.V.A. was responsible, the previous one having been held in 1948. On this occasion we wondered whether the time was ripe for yet another, but the decision was taken to go ahead, and how well the organisers' energy and enterprise were rewarded! For two days very large numbers, particularly of the younger members of the Association, attended and participated actively in the liv

* Presented to the Annual General Meeting, September 9th, 1953.

discussions which followed the presentation of 12 most excellent papers on various problems. This is a field of great and growing importance to us and one in which considerable advances have yet to be made. We cannot tackle them alone—we must collaborate with the other scientists—the biochemists, the geneticists, the agriculturists, and the grassland scientists. The efforts of all these people are essential to solve some of the problems which we in the veterinary profession are running against daily, and in which we are most vitally interested because they concern the animals for whose well-being we are responsible.

The whole atmosphere of this conference was most invigorating and the interest it created amongst our younger members was most impressive. It is through meetings of this kind that the B.V.A. can play such a vital part in adding to the knowledge and efficiency of its members and thereby make a valuable contribution to the health of our livestock.

We have also been busy in the preparation of written evidence and the presentation of oral evidence before Government Committees. The large number of outbreaks of foot-and-mouth disease occurring in the latter half of 1951, and during 1952, resulted in the Government setting up a Committee to enquire into the foot-and-mouth disease policy and control measures in this country. The Association prepared written evidence, and on two occasions our delegates appeared before the Committee. It was their considered view that the existing slaughter policy was the most suitable for this country and that, until better and more efficacious vaccines were produced, there should be no change. We also made various suggestions for improving existing measures and pressed strongly that the profession should be kept better informed about the disease, and that greater publicity should be given to the location, extent and features of the outbreaks.

Opportunity was also taken of pointing out to the Committee the serious position which might arise as a result of shortage of trained personnel in the Animal Health Division if outbreaks of scheduled diseases became widespread. It was clearly shown that the service was unable to attract a sufficient number of the right type of recruits and that this was due largely to the inadequate remuneration and status of wholetime veterinary officers in the Ministry of Agriculture. The untiring efforts of these officers, as on many occasions in the past, led to the eradication of the disease, and the Association feels, as they have proclaimed for many a long day, that their responsibilities should be recognised and rewarded by improved conditions of service.

Evidence was also given to Committees considering the siting of slaughterhouses and the slaughtering of horses.

The slaughtering of horses is a matter which from time to time attracts great public attention, by reason of the humanitarian principles involved. But I want to dwell for a minute or two on another aspect of the matter, and that is the position of the knackery trade. Here is a field where veterinary supervision seems to be particularly called for. With the exception of certain large concerns many knackeries are small one-man businesses out for a quick turnover and quick profits, and in many cases the conditions in these establishments are disgraceful. Such small businesses, though they have to be licensed by the Local Authority and the Ministry of Food, are not subject to anything like the degree of inspection which is absolutely essential on grounds of public and animal health. It is perhaps significant that during these years of acute meat shortage, when considerable quantities of horse flesh have been used for human food, many new licences have been issued and that there are more one-man knackeries than before the war. In my view there are far too many loopholes by which meat, thoroughly unfit for human consumption, can and does slip on to the market. As a profession, we have before now publicly expressed our opinion that the knackery trade should be completely divorced from the business of killing animals for human consumption. It is only too easy to transfer material from one type of premises to another.

In any case the selling of such raw meat, even for the purpose of feeding animals, should be discontinued. Meat from knackeries, which are not subject to expert inspection, is often so diseased that it is fit only for complete reduction to bone and meat meal. In any case, the knackery is essentially a place which deals with diseased animals or animals which have died from various causes, and no meat from a knackery should be sold for animal feeding purposes, unless it is efficiently sterilised.

Nor is the health of human beings and animals the only point at issue. Most small knackeries take little or no trouble to salvage the many valuable by-products from animals. Statistics are most difficult to come by, but taking the extraction rate achieved in the Edinburgh Corporation Abattoir disposal plant as a standard, it has been estimated that there is a wastage from knackeries of at least 14,000 tons of meat and bone meal, 8,000 tons of tallow, 3,000 tons of blood meal and other by-products worth upwards of a million pounds a year.

There is a pressing need for the tightening up of licensing conditions in these places. Public health, humanity and economy all demand it. (Applause.)

The question of horse slaughter leads me logically to the question of meat inspection, on which I should like to say a word or two. As you no doubt know, continual efforts are being made by this Association to bring meat inspection under the direction of veterinarians. In every country of note (and I am happy to include Scotland in this connection)—(Applause)—veterinary surgeons are responsible for this work, but for some reason England and Wales have not followed suit. One cannot help reflecting upon the anomaly under which imported meat has to carry a veterinary certificate and home-killed meat does not.

The reasons why meat inspection should come within our purview must be obvious to everyone. Our training and expert knowledge qualify us more fully for this work than any other technicians. Primarily, it is true our professional activities cover the breeding and maintenance of a healthy livestock and the promotion of optimum productivity. But there is a direct link between veterinary work in the field and the work that ought to be done by veterinary surgeons in abattoirs. If such a link were established, the *ante-* and *post-mortem* examinations immediately before and after slaughter would lead to more effective control of animal diseases generally, the initiation of new lines of research, the development of new lines of treating disease, and the stimulation of better production methods. On animal health grounds alone, the control of meat inspection by the profession is long overdue. (Hear, hear and applause.)

There is, too, the all-important question of public health. We are the only people fully and properly qualified to pass judgment on many of the pathological conditions, some of which may be obscure, in animal carcases. I say without fear of contradiction that there can be no guarantee against unsuitable meat getting into the butchers' shops while the supervision of meat inspection is left as at present. The time is ripe—indeed it is overdue—for a clean and wholesome meat campaign on similar lines to the clean milk

campaign, and the public should be aware of it. Some of you may have heard that we have decided to appoint a small fact-finding commission, which will include eminent public men outside the profession, to visit certain European countries and report upon their practice in this matter. The findings of this commission will be reported, and forwarded to the appropriate authorities, and possibly also to the Press.

Another project of considerable importance which has been evolved during the past year is the Crystal Violet Vaccination Scheme. This is a country-wide scheme designed to ensure that the bulk of the pigs in this country are immunised against swine fever at a reasonable cost and effectively. The proposals for such a scheme were first put forward by the Ministry of Agriculture and were taken up energetically by the Association. After prolonged negotiations with the Ministry and latterly with the N.F.U. the officers were able to put before the Council of the Association details of a scheme which they accepted.

Due recognition should be given to the whole-hearted way most members have agreed to go forward with this scheme. We hope the scheme will be a success—most schemes in which we participate are—and the farmers should be grateful to us for the readiness with which we have co-operated. Another benefit which will accrue from this scheme is that it will enable veterinary surgeons to visit many more pig farms where their knowledge and advice should be of very great value.

If swine fever can be controlled, and perhaps eventually eradicated, it will be another great achievement for this profession.

Occasionally one hears criticism of schemes of this kind. It is asked why are they necessary and why the practising veterinary surgeon cannot be left alone to deal as he thinks best with the problems brought to him by his clients. The Crystal Violet Vaccination Scheme is a good example of why concerted action in certain circumstances is necessary. For some time now outbreaks of swine fever have been increasing in this country, and actually there were well over 2,000 confirmed during the first eight months of 1953. This total was reached despite the fact that a good prophylactic in the form of crystal violet vaccine was available against swine fever. Actually it has been computed that less than 5 per cent. of the pig population of the country had been vaccinated against the disease and that less than one quarter of the veterinary surgeons in Great Britain were using the vaccine. Thus, it was obvious that a concerted effort had to be made by the Ministry, the N.F.U. and ourselves to bring home to the pig farmer that an effective immunising agent was available, and that it could be obtained and injected at an economic price. Existing methods of publicising and getting the vaccine used had failed, and therefore some other expedient had to be tried to reduce the considerable danger to the country's pig population.

The trend of the times suggests that schemes of this kind which are in the national interest are more likely to increase than to decrease in the future. The measures for controlling many of the major animal diseases must be applied on a country-wide scale if they are to succeed. They cannot be left to the initiative or the inclination of the individual. We must realise this and play our part in formulating such projects and giving them our weight and backing when we believe they are necessary. We cannot stand aside, for if we do, we shall see others undertaking what is our rightful work. Only by leading such national schemes, which indeed it is our duty to do, shall we maintain our independence and our status.

Much of what I have said so far concerns veterinary work among horses and farm livestock. But quite a number of you have considerable interests in small-animal practice, and in that connection I should like to say a word or two about the Champion Committee and the results of its findings. You will know that this Committee heard evidence from the profession and from certain animal welfare societies, mainly on the subject of the treatment given by those societies to sick animals of the poor, and the persons by whom such treatment was given. You will also know that the Champion Committee's main findings were to the effect that welfare societies who have no direct arrangements with members of our profession must take steps to rectify this and to see that the treatment given by those in their employment is for animals belonging to the genuinely poor only. This has long been a thorny subject, but I think that any fair-minded person would support the profession's basic contention that owners of pet animals who are able to afford a fee have no right at all to call upon the free services of charitable dispensaries. The Champion Committee have recommended that the welfare societies should consult with the profession, and endeavour to evolve a service for the animals of the poor, associated with an adequate system of almoning. In collaboration with the Royal College of Veterinary Surgeons we are in discussion with certain animal welfare societies to decide upon the best way in which this can be brought about.

The other important declaration by this Committee was that the issuing of licences to enable what are tactfully described as partially qualified persons to give elementary treatment to sick animals under the aegis of the welfare societies, should be brought to an end as soon as possible. Professional men know that the question of treatment cannot arise until a proper diagnosis has been made, and, therefore, in many cases it is idle to speak of elementary treatment, because such treatment may only be elementary when it rests upon an entirely false diagnosis due to lack of proper training.

Just in case my words in this connection should be noted by the Press, may I ask them to make this point abundantly clear. The profession does not wish to deprive the impecunious pet owner of any amenity whatsoever. Its sole purposes are to see that sick animals are treated by properly qualified people, and to ensure that charitable organisations are not taken advantage of by those who could easily pay a fee but prefer not to do so. In any case, long before the treatment of sick pets at charitable clinics was ever thought of our profession had a long and honourable tradition which still continues by which treatment is never refused simply because an owner cannot pay. (Applause.)

On another matter altogether, I should like to refer very briefly to the hope we all entertain of the immediate return of veterinary surgeons in Eire to the fold of the B.V.A. As you know, when we took our present title our colleagues felt that they could not continue to be associated with us under the new name. Fortunately, after reflection, it was decided that this division benefited no one, and the Council was delighted when an approach was made to them a short time ago with the suggestion that the Veterinary Medical Association of Ireland should become affiliated to the B.V.A. The Council unanimously accepted this proposal, and I hope the Annual General Meeting will confirm it so that I shall have the pleasure of welcoming our Irish colleagues back amongst us. (Loud applause.)

On such an occasion as this, when I am trying to glance rapidly over the wide field of our work, I should like to say a word or two about veterinary research. I think it would be fair to describe our research workers as the intellectual spearhead of the profession, and we are all very proud of the great work they have done and are doing. I feel, however, that the effectiveness of the work undertaken by them might be greatly increased by the appointment of a Veterinary Research Council analogous to the Medical Research Council. (Applause.) I am not a research man myself, but others better qualified than I have voiced this view already, and I do feel it is one that should receive serious consideration. Research is a subject of academic interest, and in such a connection, I would like to refer to the work of some of my colleagues who have assisted in the compilation of the British Veterinary Codex, which we hope will be published in the autumn.

The Codex will recommend standards for 430 drugs and 65 biological products used in veterinary medicine and will contain a formulary section giving details of nearly 350 preparations. It will also give the views of expert committees on the action and uses of the drugs and biological products. Seventy members of the three professions—veterinary surgeons, pharmacists and chemists—have co-operated in compiling this Codex during a period of over three years, and the committees have had the benefit of the advice of corresponding members in the various countries of the British Commonwealth and in the United States and of many experts in various fields in this country. The result of this co-operation will represent, we believe, a major achievement in veterinary medicine and pharmacy which has not been paralleled in any other country. To these gentlemen in our own and in the allied professions responsible for this valuable and monumental work our most sincere thanks are due. (Hear, hear.)

The thought of research and of the steady advance of the art and science of veterinary surgery turns one's thoughts to the farming community, who are the first and principal beneficiaries of what is done. The improvement of the health of their stock and the increased productivity, both of which are largely due to us, increase alike the farmers' prestige in the community and their own income. In these circumstances, I think we have a reasonable claim to fair and proper remuneration for the skilled services we supply. Farmers and veterinary surgeons must work together by the very nature of their callings. I do hope they will do so in a generous and mutually accommodating spirit.

There is just one other matter about which I have had some personal thoughts, and although it is treading upon rather thin ice, I think I should like to mention them here. It is the question of our professional code in the light of modern public relations. For good or ill we live in a time when, if people are not told what is being done, they either ignore or belittle it. I have said a little while ago that the veterinary profession, to a greater extent than ever in its history, has a vast and indispensable contribution to make to the very existence of the community. Without adequate food the nation cannot survive, and the provision of nourishing, wholesome, healthy food is a matter in which veterinary science is paramount. Are we then, perhaps, mistaken in a code of etiquette so strict that it is virtually impossible for a member of our profession to write an informative article in the newspapers, or give a talk on the wireless? No one wishes to vulgarise our calling, nor is there any suggestion that we wish to do so. But information of public interest and public importance can, and I believe should, be imparted to the responsible Press with dignity and restraint. There is such a thing as hiding one's light so closely under a bushel that there appears to the outsider to be no light at all.

Now, ladies and gentlemen, you have heard me very patiently as I have dealt rather quickly and lightly, I am afraid, with a number of important matters. But I cannot sit down without uttering a few heartfelt thanks. I am deeply grateful to the other officers of the Association; I am grateful to the permanent staff, whose devoted work plays so large a part in keeping our affairs in excellent order, and I am grateful to the whole Association who conferred upon me the honour of this office, which I am all too conscious of having discharged imperfectly, but which will remain a source of happiness and pride to me throughout my lifetime.

(Mr. A. M. Graham—B.V.A.; Professor R. E. Glover—R.C.V.S.)
THE PRESIDENTIAL PAIR.

WEEKLY WISDOM

One can see that the world is going to become one family, but we do not know how that is going to come about—by force or by peaceful ways. But modern technology is going to bring it about one way or another. . . . The consequences of our actions whether good or bad are now far more serious in these days of advancing knowledge in technology. The West's present spiritual crisis is also the world's spiritual crisis. We all recognise that Europe needs spiritual regeneration, but what is the basis to urge people to recreate the spiritual life of Europe?—Dr. J. A. TOYNBEE: Gifford Lecture, Edinburgh, October 23rd.

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Instead of making a gift of silver plate, the Urban District Council, Oakengates, in Shropshire, birthplace of Sir Gordon Richards, is to set up a permanent dispensary for sick animals in honour of the champion jockey's knighthood and Derby win.

CONGRESS ATTENDANCE LIST

Below is reproduced the recorded list of members, delegates and visitors who attended the 71st Annual General Meeting and Congress of the British Veterinary Association held in Aberdeen from September 6th to 12th, 1953. The names of members who also were delegates are included in the section devoted to the latter.

MEMBERS

(Exclusive of Delegates)

Messrs. A. D. Adams, A. J. Adams, J. Adamson, Jun., H. F. M. Aitken, G. G. Alton, J. Anderson, J. A. Anderson, G. W. Argo, G. Atkinson, J. R. Barker, J. Barr, E. F. Barrett, W. F. Barton, G. S. Beattie, I. S. Beattie, H. Begg, R. L. Bell, N. MacG. Black, Dr. W. P. Blount, Miss W. M. Brancker, Messrs. G. C. Brander, J. A. Brown, R. A. Brown, W. Brown, A. Buie, H. E. Bywater (Hon. Treasurer), A. K. Cameron, D. Cameron, Miss D. G. Campbell, Mr. J. G. Campbell, Dr. J. Carmichael, Messrs. W. K. Carnegie, R. W. Cassells, F. Chambers, A. S. Chapman, J. W. Chapman, E. Clark, H. R. Clark, J. G. Cormack, J. W. Corrie, E. R. Corrigall, E. Cotchin, Miss D. H. Crawford, Messrs. G. D. Curry, J. A. Dall, D. Deas, L. G. Donald, L. Dougal, J. M. Duncan, W. L. Dwerryhouse, G. Dykes, C. M. Ferguson, J. D. Ferguson, R. C. Fisher, E. J. Ford, W. Forgrave, C. D. Fraser, G. Fraser, A. M. Fulton, Professor R. E. Glover, Messrs. G. N. Gould, A. M. Graham (President), W. Grant, J. R. Gregg, Drs. Alastair Greig, J. Russell Greig, Messrs. C. S. Grunsell, A. A. Hamilton, Mrs. M. L. Harris, Messrs. C. B. Hart, P. S. Hastie, K. W. Head, J. S. Heath, H. F. Hebeler (Hon. Secretary), J. R. B. Hepburn, J. C. Hill, S. F. J. Hodgman, N. H. Hole, H. Holroyd, W. H. Horne, D. L. Hughes, J. H. M. Hughes, J. S. S. Inglis, J. M. Ingram, C. J. T. Ironside, A. Jack, S. Jennings, R. W. Johnston, B. R. Jones, B. V. Jones, W. O. Jones, Mrs. K. G. R. Kelly, Messrs. A. J. Kennedy, G. F. Kershaw, W. J. C. Kydd, I. Lauder, E. F. Lewis, G. B. Lewis, D. G. Llewellyn, J. J. Low, Dr. D. Luke, Messrs. J. Lyon, D. H. MacDonald, D. L. MacFarlane, W. J. McIlroy, W. M. McKay, J. M. McKellar, G. J. Mackenzie, Miss J. Mackenzie, Messrs. A. S. Mackintosh, R. D. Mackintosh, M. Maclellan, A. J. MacLennan, A. M. K. McLeod, A. J. McNair, E. A. McPherson, J. M. McQuaker, D. R. Macrae, R. R. Macrae, J. B. Makinson, J. M. Makinson, R. A. Malloch, A. Marr, W. S. Marshall, R. D. Martin, N. Mathieson, A. Miller, J. A. Milton, Drs. W. M. Mitchell, R. F. Montgomerie, Messrs. K. G. Morgan, W. M. S. Morris, R. Muir, O. Murch, Miss L. I. Murphy, Messrs. J. W. Nicholas, N. M. Noble, D. D. Ogilvie, D. F. Oliver, J. Omand, Miss J. Osborn, Messrs. R. N. Phillips, J. Plenderleith, W. Plowright, A. Pottie, H. Raeside, G. C. Rafferty, A. Reid, G. Rennie, W. J. Rice, D. P. Roberton, L. W. Roberts, R. S. Roberts, Dr. Alex. Robertson, Messrs. W. G. Robinson, W. J. B. Robson, R. J. Roe, R. F. Ross, P. M. F. Sambrook, J. Sanderson, G. A. Sangster, A. Semple, Q. M. Service, P. L. Shanks, G. A. M. Sharman, J. L. Shaw, B. Sinclair, W. B. Singleton, J. Smith, R. M. Smith, J. G. Souter, A. Spreull, Jun., Dr. J. S. Spreull, Messrs. C. A. Stewart, H. Sumner, P. M. Sutton, R. Swaby, J. M. Swanney, J. G. Taylor, A. Thomson (Junior Vice-President), W. Thomson, K. G. Towers, A. C. Urquhart, Miss O. Uvarov, Messrs. J. C. Wallace, A. L. Walther, T. Watkins, C. Watson, R. J. P. Watson, W. Watt, W. R. Watt, Mrs. W. Weipers, Professor W. L. Weipers, Messrs. E. Wilkinson, A. Wilson, A. L. Wilson, H. M. Wilson, A. N. Worden and A. J. Wright.

Overseas Representatives

Colonel Maurice W. Hale—representing the American Veterinary Medical Association.

Mr. R. H. Heywood, B.V.Sc.—representing the High Commissioner for Australia and the Australian Veterinary Association.

Sir Frank Ware, C.I.E., F.R.C.V.S.—representing the High Commissioner, Department of Agriculture, Canada.

Dr. Skydsgaard—Vice-President of the Danish Veterinary Association.

Major C. R. Chadwick, O.B.E., M.R.C.V.S.—representing Iraq, Veterinary Association.

Mr. C. V. Dayus, M.R.C.V.S.—representing the High Commissioner for New Zealand.

Dr. R. Clark—representing the Director of Veterinary Services, South Africa.

Overseas Visitors

Mr. F. A. Akin, Turkey.
Mr. A. C. Clay, Australia.
Mr. C. J. Gorrie, Australia.
Mr. W. J. Hartley, M.R.C.V.S., New Zealand.
Dr. Hans Pedersen, Denmark.
Mr. W. B. Proverbs, Barbados.
Mrs. P. G. R. Sanders, Australia.
Mrs. P. R. Walben, New Zealand.

Representatives of Government Departments

Ministry of Agriculture and Fisheries—Mr. J. N. Ritchie, B.Sc., M.R.C.V.S., D.V.S.M., Mr. E. F. Hardwick, M.R.C.V.S.
Ministry of Food—Major J. G. McGregor, T.D., M.R.C.V.S.
Ministry of Health—Dr. W. H. Bradley.
Department of Agriculture for Scotland, Department of Health for Scotland.—Mr. D. S. Barbour, M.R.C.V.S.
Ministry of Agriculture of Northern Ireland, Veterinary Research Division—Dr. W. R. Kerr, B.Sc., M.R.C.V.S., D.V.S.M., Mr. R. Moore, M.R.C.V.S., D.V.S.M.
Dublin : Department of Agriculture — Mr. P. Harnett, M.R.C.V.S., Professor T. G. Browne, Mr. J. F. Timoney, M.R.C.V.S., Mr. J. P. Nowlan, M.R.C.V.S.

Representatives of Local Authorities, Etc.

Corporation of Belfast—Mr. A. McLean, B.Sc., M.R.C.V.S., D.V.H., Councillor Major W. D. Geddis, J.P.
City of Birmingham—Mr. C. G. Allen, M.R.C.V.S., D.V.S.M.
City of Edinburgh—Mr. J. Norval, M.R.C.V.S.
Corporation of Glasgow—Mr. S. G. Abbott, M.B.E., M.R.C.V.S., D.V.S.M., Councillor J. Duffy.
Corporation of London—Mr. E. F. McCleery, M.R.C.V.S., D.V.S.M.
City of Manchester—Mr. D. E. Orr, M.R.C.V.S., Mr. L. Kirkham, Councillor O. Lodge, J.P., Councillor A. Donovan, J.P., Councillor F. Siddall, M.B.E.
City of Portsmouth—Mr. R. Scoular, M.R.C.V.S.
Preston—Mr. F. J. Proctor, M.R.C.V.S., D.V.S.M.
Institute of Meat, London—Dr. W. R. Wooldridge, M.Sc., M.R.C.V.S.

Representatives of Students' Unions

Association of Veterinary Students—Mr. A. R. Akester.
Bristol : Students' Union—Mr. R. Short.
Dublin : Students' Union—Mr. P. C. Hernon, M.R.C.V.S.
Edinburgh : Veterinary Students' Committee—Mr. D. R. N. Archibald.
London : Students' Union Society—Mr. J. Gray.

VISITORS

Mesdames A. D. Adams, J. Adamson, Miss R. Adamson, Mrs. C. G. Allen, Mr. W. C. Anderson, Mesdames G. W. Argo, J. R. Barker, J. Barr, E. P. Barrett, R. L. Bell, Messrs. D. F. Bickerton, J. N. Black, L. Brown, M. M. Brown, J. Bywater, Mrs. M. E. Cameron, Mr. A. C. Campbell, Mrs. W. K. Carnegie, Messrs. N. C. Collins, J. A. Crichton, Mesdames M. M. Dall, A. Gammack, R. E. Glover, Mr. C. Gould, Mesdames E. M. Gould, C. L. Graham, M. E. F. Grant, W. Grant, Alastair Greig, Russell Greig, Mr. W. Groves, Mesdames B. Hart, Hartridge, P. S. Hastie, R. L. Hastie, Miss Hastie, Master Hastie, Mrs. S. Hebeler, Mr. G. N. Henderson, Mesdames B. W. Hill-Owens, H. Holroyd, J. Holroyd, C. Horne, Dr. E. G. Howell, Mr. and Mrs. Howell, Mrs. D. L. Hughes, Mr. H. Ingram, Mesdames A. Jack, S. Jennings, Mr. H. John, Miss C. D. Johnston, Messrs. E. McFadden Jones, A. J. Keen, Mesdames A. J. Kennedy, W. R. Kerr, Mr. J. A. Leslie, Mesdames W. E. Low, B. M. Luke, E. Lyon, E. F. McCleery, Messrs. J. W. MacDonald, R. E. McGeath, Mrs. A. S. Macintosh, Mr. D. M. McIntyre, Mesdames A. McKellar, J. M. McKellar, A. Mackenzie, A. McLean, A. McQuaker, Mr. S. Macrae, Mesdames Milton, H. L. Mitchell, W. M. Mitchell, D. Motton, R. Muir, Mr. W. G. R. Oates, Mesdames D. D. Ogilvie, N. C. Omand, Miss J. S. Omand, Messrs. W. D. C. Parkes, G. I. Philip, Mesdames W. J. Rice, J. N. Ritchie, E. Robinson, A. M. Robson, Sambrook, Master Sambrook, Mesdames Sangster, Q. Service, H. S. D. Skea, D. Smith, R. W. Smith, J. G. Souter, A. Spreull, J. Spreull, K. Steele-Bodger, J. K. Stewart, H. Sutton, E. A. Swaby, Alex. Thomson, Messrs. A. S. Thomson, G. N. Urquhart, J. P. Warnock, Mrs. W. L. Weipers, Messrs. J. Weir, R. West, Mesdames A. E. Willox, U. C. Wilson, W. G. Wragg, Messrs. C. B. Wright and M. A. Wright.

Undecipherable signatures	...	...	4
Total (signed) attendance	...	...	**360**
Attendance at 1952 Congress	...	...	390

Lady Tweedsmuir, M.P., Opens Congress.

L.-R.—Mr. H. E. Bywater (Hon. Treasurer), Mr. A. J. Wright (Senior Vice-President), Mrs. A. M. Graham, the Lord Provost (Rev. Professor John M. Graham), Mr. A. M. Graham (President), Lady Tweedsmuir, Mr. Alex Thomson (Junior Vice-President; President-Elect), Mr. H. E. Hebeler (Hon. Secretary), Mr. F. Knight (General Secretary), Dr. Alastair Greig (Local Hon. Secretary).

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BRITISH VETERINARY ASSOCIATION ANNUAL CONGR

CONGRESS, ABERDEEN, 1953

Photo: M. H. Gloyer, 10, Belmont Street, Aberdeen.

OPENING MEETING AND CIVIC WELCOME

Addresses by the Lord Provost of Aberdeen and Lady Tweedsmuir, M.P.

The 1953 Congress at the Music Hall, Aberdeen, was opened on Monday, September 7th, when the British Veterinary Association was first accorded a Civic Welcome by the Hon. the Lord Provost of Aberdeen (Rev. Professor John M. Graham, M.A.), followed immediately by the opening of Congress by the Lady Tweedsmuir, M.P.

There was a crowded assembly when the President, Mr. A. M. Graham, M.R.C.V.S., took the chair, with him on the platform being the Lord and Lady Provost with Lady Tweedsmuir; the Senior Vice-President, Mr. Alan J. Wright; the Junior Vice-President and President-Elect, Mr. Alex. Thomson; Mr. W. J. B. Robson, Chairman of the Provisional Committee; Dr. Alastair Greig, Local Hon. Secretary; Mr. H. F. C. Hebeler, Hon. Secretary, B.V.A.; Mr. H. E. Bywater, Hon. Treasurer, and Mr. F. Knight, General Secretary.

The PRESIDENT: Ladies and gentlemen, this is the opening ceremony of the 71st Annual Congress of the British Veterinary Association and I have very great pleasure in introducing to you the Lord Provost of Aberdeen, the Rev. Professor John M. Graham, who has very kindly come along to give us a civic welcome.

Ladies and gentlemen—the Lord Provost of Aberdeen—Professor Graham. (Applause.)

The Rev. Professor JOHN M. GRAHAM, M.A. (Lord Provost of Aberdeen) : Mr. President, Lady Tweedsmuir, ladies and gentlemen, I have just had the interesting experience of visiting Denmark, where, amongst other things that I noticed in the city of Aarhus, there is erected a statue in the city square comprising a very healthy-looking and fertile sow with I do not know how many suckling pigs. One of our local authors on the north-east lowlands of Scotland has suggested that in every market town of this province there ought to be a statue erected in honour of the swede, the turnip. I think that in Aberdeen itself the statue would have to include a number of other things, including fish of various sorts and no doubt the Aberdeen Angus bull, and if such an ambitious group of statuary was to be erected we ought to include with these creatures, vegetable and animal, their human attendants and among these most certainly there should be a veterinarian.

I do not suppose you have a marine section as yet, attending to the health of the fish, but we are well aware in these parts—because this city's life is quite consciously rooted in the country round about—of the importance to successful animal husbandry of the work of the veterinary expert.

We are all the more glad, therefore, to welcome this Annual Congress of your Association in this city. I hope you will find the arrangements made for your meetings satisfactory and that those of you who wish to combine your business with social and other pleasures will find Aberdeen a happy holiday place—and we are doing our best with the weather meantime.

In these days when so much is changing, a second revolution is taking place in agriculture in which this city and its neighbourhood, both in a practical and in a theoretical way, are playing a part. I have no doubt that with the tremendous changes that are going on in agricultural methods, including the rearing of stock, the work of the veterinary surgeon is very exciting at the present time. There must be a lot of active research going on and for all

The President greets the Lord Provost.

of you that means an effort to keep up to date with the latest methods. I am sure, also, in these changing days in social matters, the profession to which you belong faces a number of problems and that your Congress here, therefore, will be absorbed in quite important discussions.

I hope that under the chairmanship of a fellow clansman your discussions will go forward harmoniously and fruitfully and that you will much enjoy your visit to Aberdeen.

I bid you a very warm welcome to this city. (Applause.)

The PRESIDENT : On behalf of the British Veterinary Association, Sir, I should like to thank you for the warm welcome you have given us here this morning. I notice that during your introductory remarks you referred to fish. There are a few members here who belong to the Ministry of Agriculture and Fisheries, so you will see we are not quite unrepresented in that field. We are very grateful for the facilities you and your councillors are making available to us during this week and we are looking forward to a very happy stay in Aberdeen. I think it was in 1924 that we held here one of our largest and most successful Congresses and I feel already that this one is well on the way to equalling if not surpassing that occasion. There will be other opportunities for expressing our gratitude to you and your councillors, but, in the meantime, I thank you most sincerely for giving this Congress such a warm welcome to the "Granite City."

Ladies and gentlemen, I have now very great pleasure in introducing to you Lady Tweedsmuir . . . (Applause.) . . . who has very kindly come along here to open our Congress for us. Most of us know Lady Tweedsmuir. She has great charm and grace, if I may say so, and any amount of talent, and I think she is one of the outstanding personalities in the House of Commons. (Applause.)

The Lady TWEEDSMUIR, M.P. : Mr. President, my Lord Provost, ladies and gentlemen, it gives me very real pleasure to have been asked to open what is an important six-day Congress of your British Veterinary Association, and in adding my welcome to that of the Lord Provost may I recall that Aberdeenshire itself has been the birthplace of many distinguished veterinary surgeons. It is because of that, because most of your office bearers are Scots and because your Association is a leading one within your profession that up here we do watch your work and your steady progress with very real, personal interest.

I think the work of the veterinary profession is of daily-increasing importance, chiefly for three reasons: first, the provision to the public of clean and safe foods of animal

origin; secondly, the reduction by means of scientific research of the toll of animal disease which, of course, means low production—low production in meat, in eggs and in milk; thirdly, as we all know, there is a very grave and increasing food shortage on a world-wide scale owing to the increase of world population. It can be countered to some extent at any rate by the work of veterinary science in all countries, but especially in backward countries, thus enabling them to improve the quality and quantity of their own home-produced food.

To enlarge a little on these three subjects I would say this. First of all, clean milk as such is widely available, and the profession's contribution to maintaining the health of dairy cattle has unquestionably lowered the incidence of tuberculosis and other diseases which are communicated to human beings by milk. Great progress has been made, particularly in Scotland, with the Attested Herd Scheme. Those here who are not members of the profession will nevertheless know that the purpose of this scheme was to increase the number of herds which are maintained free of tuberculosis infection. I myself, 18 years ago, started with my husband an attested dairy herd in Aberdeenshire and we often had to pay tribute to your profession. Your profession's work in this field has contributed greatly to public health because you have ensured supplies of healthy, non-infected milk to the housewife and the school and, of course, it has also had the effect of protecting the standard of health in our herds as a whole.

There does, however, remain a need to increase the care taken with meat. I was very sorry to learn that in Britain the system of food inspection, which includes meat, does not attain the same standard as in many other countries. I would say at this Congress that it is a grave reflection on British methods and it is surprising to realise that imported meat is subjected to standards of investigation while for the most part home-killed meat is not. There would appear to be a considerable argument for the matter to be under the control of veterinary surgeons who are, of course, specially fitted for it. (Applause.) It seems I have said what you wanted to hear. (Laughter.) Surely you feel you are specially fitted to undertake this particular type of food inspection and I am not going to go further into this matter because I know it is going to be a subject which will no doubt be hotly debated later in this Congress.

I would, however, say I do feel regarding the public at large that there is considerable ignorance as to the rôle of the veterinary scientist. It is too easily supposed that because at present your profession recommends slaughter in such diseases as foot-and-mouth, fowl pest and so on, this shows a defeatist attitude. This is not true, because although your profession is agreed on this policy at the present time, nevertheless many of the foremost scientific minds in this country are applying themselves to the prevention, and we hope the eventual elimination, of these diseases. We have reason to have considerable hopes that veterinary science will triumph in due course because, after all, success has been won before against cattle plague, glanders and other diseases which once decimated our herds and still rage in Africa and Asia.

According to the last report of the international Food and Agriculture Organisation, the loss to British agriculture through animal disease, much of it preventable, was estimated at £80,000,000 a year. Therefore it will be seen that the substantial reduction of this enormous sum is one of the greatest tasks before your profession now.

Of course, much is heard of the really alarming growth of world population in the light of food production. Taking Africa alone, the population in 30 years' time will easily have doubled the need for the present food production; and, taking into account the incidence of death, there are every day born into the world 70,000 new people to feed. Therefore it is obviously important that western veterinary science, in which British veterinary science plays so conspicuous a part, must continue to reach out to backward areas all over the world and thus enable their African and Asiatic neighbours, by treating the worst of the killing and other diseases, to preserve natural food resources and play a larger part in feeding themselves.

Reference having been made to public health so far as it lies within the sphere of this profession, I should like to make a passing reference to the Animal Health Division of the Ministry of Agriculture—called sometimes the Ministry of Agriculture and Fisheries—of which your President, Mr. Graham, is a very distinguished member. I think he will agree that the professional officers of the division are constantly alert to preventing diseased foodstuffs from entering this country, also to preventing animals, and birds possibly, from carrying germs of such diseases as foot-and-mouth and fowl pest and spreading them among our own animals. Therefore they are guardians of human health as well as animal health.

I have heard constantly of the super-human efforts put out by the Animal Health Division at times when there are large outbreaks of foot-and-mouth, swine fever and fowl pest. It could be wished that the public at large were really aware of the great services rendered to this country by your body of veterinary surgeons. (Hear, hear.)

As the Coronation is not long past I should like to refer just briefly to a small but very active branch of the profession, namely, the Royal Army Veterinary Corps. I understand that it was this corps which was responsible for the preparation and training of those magnificent horses which took part in the Coronation. I think there was indeed a special task before them and these horses had the responsibility of carrying many distinguished members of our country who had served their country well, but not necessarily on horseback. (Applause.) In fact it was outside the Houses of Parliament on Coronation Day that a certain very distinguished naval man was seen to be slightly uncomfortable upon his steed and, as he passed by, a cockney voice rose from the crowd—"Stick it, mate! What price now, the cruel sea!" (Laughter.) I understand that there is a very real chance of the Royal Army Veterinary Corps becoming responsible for the food control service of the Army and I wish them all good success if they do so.

In this country when anyone rises to speak on the subject of animals it is taken for granted that he or she will refer to the domestic pet. There are thousands which give pleasure to their owners in this country and, indeed, my own family has had many an occasion to be grateful to your profession. My husband alone has at one time or another kept the following domestic pets: four kinds of hawk, a fox, a badger, a cheetah, a spur-winged goose, a small African antelope, a monkey, a civet cat, two baby polar bears and of course the usual cats, dogs and white mice. I believe a number of you in this audience devote your professional lives to small-animal practices and I wish only to say this, the domestic pet when it is hurt or ill does deserve the very best treatment possible.

It is because that treatment can only be given by the veterinary surgeon that I heard with such interest and pleasure of the voucher and other schemes which enable people of small means to obtain the service of what we call

with affection "the vet," either free of charge or at a very small cost. I know that it is a proud and long-standing tradition of this profession that no animal is ever turned away because its owner cannot afford to pay for its treatment.

In conclusion, Mr. President, I would say this : I think that this brief survey that I have made of the vital work of this profession should convince us, if we need that conviction, that your profession plays a very important part indeed in our daily lives and it is because of that that I wish you wholeheartedly a most successful Congress and I hope a stimulating and gay stay in our city of Aberdeen. (Applause.)

The President : Thank you very much, Lady Tweedsmuir, for an exceedingly interesting and shall I say stimulating address. We were very intrigued to hear what you had to say because we thought your views—expressed from a lady's point of view—of the veterinary profession would be very interesting indeed, and it has been most gratifying to us to listen to them. I can see the public health aspect of our work appeals to you and we are very glad of that because we ourselves think it is a most important field. You mentioned the Attested Herd Scheme in Scotland and the great progress it has made. You mentioned also meat inspection, but you very modestly did not stress too strongly that south of the border we are far behind Scotland as regards the standard of meat inspection and that your standards lead many of the European countries. I could go on for a long time on these topics, but I do not think I should at this stage because I will be saying quite a lot about them later in the week. I would simply say thank you very much again, Lady Tweedsmuir, for a most stimulating address, for so graciously opening our Congress and for giving us fresh incentive to go after the things which are rightfully ours.

Lady Tweedsmuir was again applauded as she was then presented with a bouquet by the Hon. Secretary, Mr. Hebeler.

Welcome to Delegates and Guests

The President : The next item is to welcome delegates and guests from overseas and those from home who represent government departments and local authorities. I will ask the Secretary to read out the names of these delegates and guests.

[The General Secretary (Mr. F. Knight), duly read the list of those whose names are included in the special section devoted to them in the Congress attendance list published immediately following the President's address with which this issue opens.]

The President : To all of you gentlemen we extend a most hearty welcome to this Congress. We hope you will take part in our discussions and debates, and that particularly at our social functions you will join in and really enjoy yourselves, so that before you leave Aberdeen, even if you are not Scottish, you will all have become experts at highland dancing. Later on in the week, if you wish, you shall have an opportunity of bringing greetings from your various associations and societies, but in the meantime I do extend to you a very hearty welcome and can assure you we are delighted to have you with us. (Applause.)

Opening of Exhibition of Surgical Instruments, Drugs, etc

The President: Ladies and gentlemen, the next item—and a most important one—is for me to open the trade exhibition and to welcome those members of the firms who are exhibiting this year at Aberdeen. Each year these gentlemen seem to put on a better display for our benefit and we are greatly indebted to them for the help they give us and for the fine assortment of instruments, drugs, books and all manner of things they put before us which keep us up to date and which are such a great help in our professional life. This exhibition is a very important part of our Congress for we see the very latest developments and we are grateful to the exhibitors for coming along each year and giving us such a fine display. Apart from that, I know these gentlemen like coming to our Congress—they have told me so—and I can assure them that their enjoyment is no greater than ours in having them with us.

Lady Tweedsmuir tours the exhibition with the President.

I have very great pleasure in declaring the exhibition open. I will now tour the exhibition and I hope as many of you as possible will come round with me and see the magnificent show which has been put on for us.

Mr. N. H. Mathieson: I have been asked by the B.V.A. Exhibitors' Committee to thank you, Sir, for the very kind way in which you have welcomed us, the exhibitors, to your Congress. You always make us feel very welcome indeed and I am most grateful to you for the kind words you said in opening the exhibition. We do endeavour always to serve the profession to the very best of our ability and, in fact, the exhibitors have through their various organisations already made notable contributions to the advancement of science. That advancement can only be continued by the most willing and full co-operation between the laboratory and the clinician in the field. I know I can look to you, Sir, and members for an extension of that co-operation.

(*Concluded at foot of col. 1, page 700*)

BRITISH VETERINARY ASSOCIATION
71st Annual General Meeting

The 71st Annual General Meeting of the Association was held in the Music Hall, Aberdeen, on the afternoon of Wednesday, September 9th, 1953, with the President, Mr. A. M. Graham, M.R.C.V.S., of Maidenhead, in the chair.

The list of those attending the associated Congress will be found following the President's Address at the commencement of this enlarged issue recording the proceedings.

Following is the list of members who sent apologies for absence from the Annual General Meeting: Mr. Guy Anderson, Dr. N. S. Barron, Messrs. George W. Begg, G. H. Bennett, A. G. Beynon, J. D. Blaxland, Professor G. F. Boddie, Mr. K. E. Brown, Professor T. G. Browne, Messrs. D. K. Bryson, G. K. Buckler, Arch. D. Campbell, Miss M. Dalby, Dr. G. O. Davies, Mr. A. C. Dixon, Major J. J. Dunlop, Mrs. R. Eden, Mr. John B. Edwards, Dr. S. J. Edwards, Captain J. Fox, Miss M. J. Freak, Messrs. Adam Fulton, L. St. Bel Golledge, Dr. R. F. Gordon, Dr. O. V. Gunning, Mr. H. E. Harbour, Dr. Tom Hare, Dr. W. M. Henderson, Brigadier A. G. Heveningham, Messrs. H. Raynor Hewetson, L. E. Hughes, Oliver G. Jones, J. O. L. King, Major Hamilton Kirk, Dr. H. G. Lamont, Mr. G. V. Laugier, Miss M. V. Levie, Dr. R. Lovell, Professor J. McCunn, Messrs. W. C. Miller, P. J. Mitchell, G. M. G. Oliver, Miss J. Osborn, Professor C. W. Ottaway, Brigadier E. S. W. Peatt, Messrs. L. E. Perkins, D. W. S. Pettett, G. S. Powley, P. A. Rogan, W. T. Rowlands, Walter Scott, G. F. Smith, A. J. Wilsdon, J. E. Wilson, Miss C. A. Woods and Professor Geo. H. Wooldridge.

PUBLIC PROCEEDINGS

The President: The first item on the agenda, ladies and gentlemen, is the notice convening the meeting. I will ask the Secretary to read the notice.

The Secretary (Mr. F. Knight) accordingly read the notice convening the meeting.

The President: Item two is the presidential address which I shall now read. (The President then read his Address from the Chair, which was enthusiastically received.)

Mr. A. J. Wright (Vice-President): Ladies and gentlemen, I am certain it would be your wish that we should not let this occasion pass without extending thanks to our President for this excellent address. He has prepared and delivered this address in the same capable, efficient and excellent manner in which he has always carried out his tasks and duties as an officer and your President. In his stimulating address he has covered a very wide field, he has touched upon many important and vital points which I am sure will give us all much food for thought. Therefore, on your behalf, I have very much pleasure in proposing a hearty vote of thanks to you, Mr. President, for this excellent address. (Applause.)

Meeting Places for 1954 and 1955

The President: Thank you, Mr. Wright, and thank you, ladies and gentlemen. We next come to item three, meeting places for 1954 and 1955. The Council has decided to recommend to this Annual General Meeting acceptance of the recommendation made last year, that the Annual General Meeting and Congress of 1954 be held in Torquay. I should like to move that this recommendation be accepted.

Mr. H. M. Wilson (Cupar): I second.

The President: You have heard the resolution put forward by myself and seconded by Mr. Wilson. Is it your wish that our next Congress be held in Torquay?

The motion was carried.

The President: For 1955, the Council recommends the Congress be held at Belfast. Now we gave quite a lot of consideration to this this morning and it was our unanimous wish that we should go there. We had a very successful Congress in Belfast some years ago and we have received a very warm invitation from the North of Ireland Division, and I am sure if we went back there again we should have a most successful and enjoyable Congress. I have very great pleasure, therefore, in proposing that in 1955 the Congress be held in Belfast. Of course, this will be subject to confirmation at the next Annual General Meeting, but we usually put forward the suggested venue two years ahead: I have very great pleasure in proposing from the chair that Congress be held in Belfast in 1955.

Dr. Kerr: I formally second that the Congress be held in Belfast in 1955. It was held there in 1935. We think after 20 years it is very appropriate to return.

The President: I hope you are all in agreement with that proposition. (Agreed.)

Election of President for 1953–54

The President: Item four, election of President for the year 1953-54. It is the unanimous recommendation of your Council that Mr. Alex. Thomson be our President for 1953-54. (Applause.) It gives me very great pleasure, ladies and gentlemen, to put his name forward to you because he is so well fitted for and so well deserves this honour. He has done very great service for our profession and for this Association and I think it is a very just reward that he should occupy the presidential chair. He stands very high both in the practising and in the educational spheres of our profession and I think we are all agreed he will make a most excellent leader. He has wisdom, understanding and wide experience. For 28 years he has been Secretary of the West of Scotland Division—a very magnificent record—and also President of the Scottish Branch and Local Secretary of our Congress when it was held in Glasgow in 1938. As one would expect, he has been a great success in all these jobs, an active and valued member of our Council and on certain committees, and for many years he has been on the Organising Committee. In all aspects of our professional work he has a very wide knowledge indeed and I am quite sure that his particular experience of small-animal work will stand him in very good stead when, as we anticipate during the coming year, this side of our activities will come very much to the forefront.

You will have gathered from what I have said that Mr.

It gives me very great pleasure to ask your wife, Sir, to accept from us a very small token of our appreciation. May I ask Mrs. Gimber to present this to your wife.

Mrs. Graham, having received a bouquet from Mrs. Gimber, said: I am afraid I am quite unable to make speeches outside the home. I can only say thank you very much indeed for these lovely flowers. (Applause.)

The President: Thank you, Mr. Mathieson for those very nice remarks. I did not expect my wife to say anything. Although she is English I brought her up in the Scottish tradition—she should keep quiet on an occasion such as this. (Laughter.)

Now, ladies and gentlemen, if you will join us, we will go round the exhibition and see the display.

Alex. Thomson is well qualified to be our next President and that we can put our faith and trust in him. So without further remarks from me, ladies and gentlemen, I have very great pleasure in proposing to you that Mr. Alex. Thomson be our President for the ensuing year. (Applause.)

Mr. J. R. Barker : May I be allowed to second the resolution so ably proposed by yourself. First, we welcome Mr. Alex. Thomson in the tradition of a practitioner with an academic interest and of eminence in the City of Glasgow. He also has tradition with him, and the best veterinary tradition, in that he is married to and lives with a very charming lady—(applause)—who I am sure will assist him in the many ways in which a good wife can assist a very good president.

I take rather a nice personal interest in seconding this resolution because in 1935, at Belfast, we were room mates and I am quite delighted to find he is following in the steps of his predecessor. Another point that will commend Mr. Alex. Thomson to you is his absolute integrity. In these days that is essential and rather difficult to find, and we welcome your suggestion, Mr. President, and I should like to second. (Applause.)

The President : Thank you, Mr. Barker. Now, ladies and gentlemen, if there are no other nominations I shall put this proposition to the meeting, that Mr. Alex. Thomson be our President for the ensuing year. (Voices : Aye !) That is unanimous.

Mr. Alex. Thomson, I have very great pleasure in informing you that you have been elected President of the British Veterinary Association for the year 1953-54, and may I congratulate you. (Applause.)

Mr. A. Thomson : Mr. President, Mr. Barker, ladies and gentlemen, I must thank you, Mr. President and Mr. Barker, for the very nice things you said about me in introducing me to this gathering to-day and I can only say that there are three things necessary for me to carry out this task. First, the help of God ; secondly, the help of my wife and my staff, and, thirdly, the indulgence and willing help which I know I shall get from the members of this Association. I am very pleased that I am following the footsteps of my former room mate in Belfast, Mr. Barker, and I only hope I can emulate him. Thank you very much. (Applause.)

Presentation of the Dalrymple-Champneys Cup and Medal

The President : We now come to item number five, which is the presentation of the Dalrymple-Champneys Cup and Medal. I am very sorry that this year Sir Weldon and Lady Anne cannot be with us but they have asked me to convey to you their regrets at their absence and their hopes that we have a most successful Congress.

None of the presidential duties at this time of the year exceeds in pleasure the presentation of this cup and medal. As you can see, it is no light award. It is given each year, or, rather, a recipient is selected each year by a committee consisting of past recipients of the cup and medal and they do select the new recipient with great care and take a great deal of trouble about it. The greater the honour, therefore, and I am sure the greater the delight among you when I announce that this year's recipient is none other than our old friend and esteemed Past-President, George Newman Gould, and that it has been awarded to him for his outstanding contribution to veterinary practice and the application of modern methods to the changing conditions of animal husbandry. (Applause.)

Originally, you will remember, the donor decided that the award should be made to the author of published work of outstanding merit. Later these terms were widened to include those whose work may or may not have been published but which it is considered will encourage the advancement of veterinary science. While George Gould has much published work to his credit, he would, I am sure, wish to be included in the second category. For our part we look upon him as a member of that select group whose work for the profession is so familiar as to render superfluous the recital of a printed record of his writings. To give you proof, however, that Mr. Gould goes by no means unrepresented in this field I may remind you that only this year he has something pretty monumental very largely to his credit. I refer, of course, to the proceedings of the conference on metabolic disorders and other problems related to grassland and fodder crops and innovations in animal husbandry. That, by the way, is but one of a series and it gives the clue to his whole outlook—innovation, progress, achievement, regardless of personal effort.

Mr. Geo. N. Gould receives the Dalrymple-Champneys Cup.

I was intrigued to see that he was commended to the selection committee as " one of the most enterprising of the younger school of practitioners." While one may be prompted to enquire as to the leaving age, it is true that George Gould retains the enthusiastic approach of youth towards all the problems with which he is confronted. Cattle diseases, to mention perhaps his main concern, exist only to be studied and overcome.

Soon after qualifying, George Gould realised that the scope of veterinary practice should not be limited to the treatment of the individual animal, but that the practitioner should concern himself with matters such as feeding, pasture management, breed and herd care in general. He was not satisfied, however, in thereby improving the outlook for his own clients in regard to type and quality of animal and its freedom from disease. The national herd demanded attention. And so it was during the war years, with the late Mr. Harry Steele-Bodger—a man after his own heart and with his own ideals —and with other members of the Association, the opportunity was taken to launch the survey scheme for the control of certain diseases of dairy cattle.

This enterprise has since been recognised as a major contribution to the war-time effort of a profession which otherwise would have felt itself even more thwarted and frustrated, through the ban imposed by a " reservation." In carrying it through in the field, Mr. Steele-Bodger had no more devoted and able lieutenant than Mr. Gould and when in due course the Survey Committee, which had enlarged its sphere of enquiry to include other stock, changed into the present

Technical Development Committee there was the natural successor as chairman to hand. As you will know, it is a committee of immense range and activity and is prolific in its output of handbooks, helpful alike to the veterinary surgeon and the student, and surely of considerable economic significance to the country.

There is no time to talk of the remaining activities of a man of many other important interests, who still goes from strength to strength, witness his appointment in June as a Justice of the Peace for the borough of Southampton. He is a member of the Council of the Royal College and was Chairman of the Preliminary Investigation Committee.

One feels that Mr. Gould's real enthusiasms are best illustrated by the interest he takes in such organisations as breed societies and young farmers' clubs. Those organisations provide him with a field in which to use his organising ability and creative genius.

Ladies and gentlemen, I am sure you will wish to join me in congratulating Mr. Gould on the award which is so rightly his. Mr. Gould, I should like you to come up on the platform. (Applause.)

Mr. Gould, I ask you to accept this cup and medal as an indication of appreciation of the services you have rendered to this Association and of the supremely practical and valuable contributions you have made to the advancement of veterinary science. (Applause.)

Mr. Gould, having received the award, said: Mr. President, when you so kindly telephoned me some weeks ago and told me the decision of the Dalrymple-Champneys Prize Committee to award this cup and medal to me at this Annual General Meeting you were made well aware of my surprise by the way in which I received your message.

I realised immediately that the time would come when I would be required to make some response to the very generous terms in which you were sure to present this cup and medal to me, and after hearing you talk just now about someone whom I could not recognise at all, I find it more difficult than ever to respond to your very generous praise.

I may say that I have—both sleeping and awake—composed many brilliant responses, all of which completely elude me at this moment. I therefore begin simply by thanking you very much indeed for your extreme kindness and for the wonderful way in which you paid tribute to what I am supposed to have done. May I thank the selection committee for the confidence they have shown in me in nominating me for this prize; the Council for its support of that nomination; and last but not least this Annual General Meeting for the great generosity with which they received your words to-day.

I was assured by you, Mr. President, that this presentation was made in recognition of the contribution I have made to veetrinary practice. Can I, at this stage, just pay tribute to my wife—(applause)—for the particular part she has played because, as you know better than a good many people, it is a considerable one.

It is indeed an honour to know that my name will be added to the roll of those who have received this cup and that it will be associated not only with distinguished colleagues in fields other than practice but with such practitioners as the late F. T. Harvey, of St. Columb, who received the cup in 1937—a final year examiner at the time I qualified; my friend the late Harry Steele-Bodger, who received it in 1946—the year of my presidency—and of whose contribution to veterinary practice there can be no doubt; and also another friend, Brayley Reynolds—one of my teachers as a student whose recognition by this award came in 1950 for his eminence in the thoroughbred field.

Mr. President, I am indeed honoured by this presentation. If to do one's best in the clinical field is to be recognised from time to time in this way it must act as an incentive to all in practice. Recognition of such endeavour by one's colleagues is indeed both pleasant and thrilling. Thank you very much. (Applause.)

The President: Ladies and gentlemen, that brings us to the end of the public part of our meeting and we now adjourn for 10 minutes. When we reassemble the meeting is open to members only. Thank you very much.

Adjourned for a short time

The Business Meeting

Annual Report and Balance Sheet

The President: We will now proceed with the second half of our meeting. The first item is the annual report and balance sheet. These have been approved by Council, but I will ask the Hon. Treasurer to say a few words about the balance sheet.

Mr. H. E. Bywater (Hon. Treasurer): Mr. President, ladies and gentlemen, there is never much difficulty in presenting a balance sheet when it is on the right side, and you have a surplus, so my task is very easy to-day. I would point out, however, that a great deal of the credit for the fact that we have a favourable balance is due to the fact that some time ago an economy sub-committee was appointed. It is due to their efforts that substantial savings have been made in various directions. There was an alarming upward trend in the cost of producing *The Veterinary Record*, but I am pleased to say that that trend has been not merely arrested but, despite an increased circulation, we have actually spent £300 less on printing the *Record* this year by comparison with last year.

Owing to what was probably an unfortunate circumstance, in that the office was depleted of a certain amount of its staff for a period during the year, we have saved another £300. I should like to say to Mr. Knight, and through Mr. Knight to his staff, that I at least appreciate the extra labour that was performed when the office was only partially staffed. (Applause.)

This saving of £600 was more than offset, however, for expenses have gone up by £900. We have been very fortunate in advertising and the net result is that we have something approximating a £6,000 surplus, which is a record for the Association that is not likely to be repeated, though I hope it will be. It came at an exceptionally fortunate time because, as you know, we have now purchased premises which have cost us £15,000. We have another £7,000 to find for alterations and adaptations, but in the end we shall have a very fine security, if we ever want to pawn it, in our headquarters.

Unfortunately, a headquarters of the type we have acquired will mean an increased expenditure in annual upkeep, so it will be necessary for us carefully to watch our finances in the future. Now that the officers of the Association are all Scottish, with the exception of your Hon. Treasurer—even he cannot claim absolute immunity from certain hereditary influences—I am hoping that with their co-operation and that of the Council we shall keep our finances on sound lines.

I regard our going to the new premises as the passing of the adolescence of this Association. I think we have now grown to adult stage and I see no reason why we should not continue to prosper. The amount of expenditure which is now incurred in our annual budget is considerable and it calls for the augmentation of our income as much as possible

Photo: M. H. Glover, 37, Belmont Street, Aberdeen

Professor A. Robertson, M.A., B.Sc., Ph.D., M.R.C.V.S., F.R.I.C., F.R.S.E. (Edin.) (Junior Vice-President, President-Elect, B.V.A.)

by increased membership and the careful husbandry of our funds.

The President : I will ask the Secretary to read the auditors' report.

The General Secretary accordingly read the report of Messrs. Fairbairn, Wingfield & Wykes, chartered accountants, the auditors.

The President : Ladies and gentlemen, you have heard our Treasurer's report and the auditors'. I might tell you that when our Treasurer speaks in the vein in which he has this afternoon I think you can take it that the finances are in a not too bad state.

Would someone like to propose—unless you have some comments to make—that the report and the balance sheet be adopted ?

Professor W. M. Mitchell (Edinburgh) : I should like to propose the adoption of the accounts. I seem to remember Mr. Bywater as a black wolf and he seems to have changed his colour. I am glad to note that there is this £6,000 surplus. I think it does credit to the black wolf for having accumulated that money through his barkings. With the incoming President, and Vice-President, I think we are safe in thinking that the Treasurer will be kept well in hand, but I would warn you that he has changed his voice altogether and you had better watch him. (Applause.)

Mr. J. R. Barker (Hereford) : I second.

The President : Those in favour ? . . . Thank you very much.

The motion was carried.

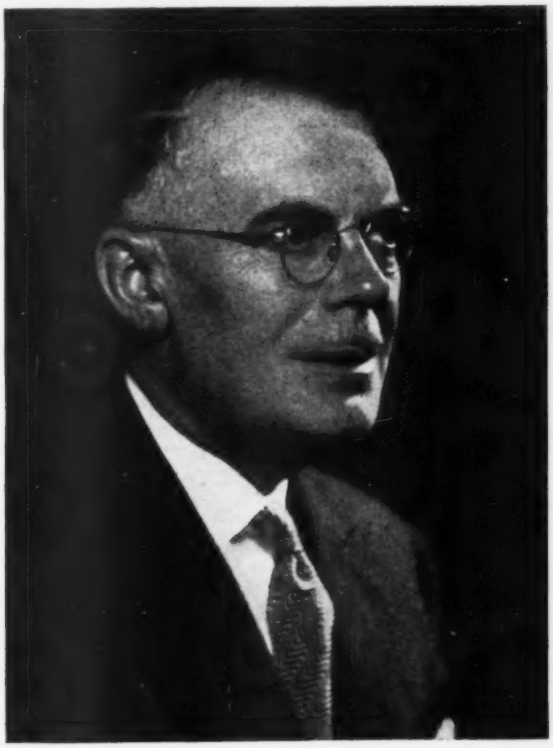

Photo: Deste, 49, South Molton Street, W.1.

Mr. J. McConnachie Ingram, M.R.C.V.S., Oxted
(Our New Hon. Secretary).

Election of Vice-Presidents and Other Officers

The President : The next item on the agenda is the election of the Vice-Presidents and other officers. As you know, there are two Vice-Presidents. The retiring President automatically becomes the Senior Vice-President, but as a matter of formality there has to be a proposal, with a proposer and seconder, so if someone will deal with that it will enable us to get on with the more important job of electing a Junior Vice-President.

Mr. A. J. Wright : I had pleasure in proposing your name when you were made Junior Vice-President, Sir, and I now have pleasure in proposing that you shall be Senior Vice-President.

The motion was formally seconded.

The President : Those in favour ? . . . Against ? . . . Unanimous.

The next officer to be elected is the Junior Vice-President, and I have very much pleasure in proposing from the chair that Professor Alex. Robertson be our Junior Vice-President and President-Elect. (Applause.)

I can assure you that his nomination was unanimous and I think all of you will agree it is a most excellent choice. (Hear, hear.) I do not want to go into all his academic attainments—they are very considerable—and in that particular sphere he has proved himself an outstanding man. As you know, he is an M.A. and B.Sc. of Aberdeen University. He obtained the Fitzwygram prize at the Royal (Dick) Veterinary College in 1934 and his Ph.D. in 1940. He now occupies the Chair of Veterinary Hygiene and Preventive Medicine at the Royal (Dick) School of Veterinary Studies.

From the B.V.A. angle, he has taken a very active part in our affairs for a number of years. He is Chairman of what is probably one of our most important committees, the Veterinary State Medicine Committee, which turns out a vast amount of work each year, and I can assure you that he does conduct the activities of that committee in a very able way indeed.

He has been the President and Secretary of the Scottish Branch and he has also been President of the Scottish Branch of the Association of Veterinary Teachers and Research Workers. His clear, concise contributions to our debates have been very valuable indeed and I am sure that when he comes on, as he will do without doubt, to assume the office of President he will make a very fine one.

I am not going to say more about Professor Robertson because he is an outstanding man and I have very great pleasure in proposing that he be elected our Junior Vice-President and President-Elect for the ensuing year.

Mr. S. JENNINGS (Glasgow) : This Association has had a long line of eminent veterinarians as Presidents and you, Sir, have already spoken of the eminence of Professor Robertson. I, however, want to speak from another angle. Professor Robertson and I were students together. I am sure you will agree that students have a unique opportunity of getting to know one another well and that one student will be able to judge the character and integrity of another. Of course we were poles apart in that : as you have already pointed out, this man was a Fitzwygram student !

Years rolled by and I found myself on the same staff at the Royal (Dick) Veterinary School. A prophet is not without honour save in his own country and it is only when you are serving on a staff with another man that you begin to know him really well. It seems then as if his very soul is thrown open and you see into it, and, Sir, I had this opportunity.

I was not born under that gleaming star which appears to shine only on the northern regions of the British Isles, and being only of humble birth I can claim to be speaking without bias on this matter. I believe that our Presidents are elected on sheer merit.

Remembering that this post, if events take the usual course, leads to presidency in a year's time, I would just like to say that I think the B.V.A. would go a very long way before it could find a man so suitable for this office.

I wonder, Sir, if you have ever noticed his feet ? They are a wonderful pair for putting the right foot forward. He has a splendid shoulder for putting to the wheel. And that nose of his—can't you just see it against the grindstone ? Even the very hat he wears is so suitable for keeping things under when necessary. Sir, I have the greatest pleasure in seconding the proposal. (Applause.)

The PRESIDENT : You have heard this proposal, that Professor Robertson be our Junior Vice-President and President-Elect for the ensuing year. Those in favour ? . . . Against ? . . . That is unanimous.

Professor A. ROBERTSON (Edinburgh) : Mr. President, ladies and gentlemen, I do not think this is the time for me to say very much except to express appreciation for the very great honour you have done me and for the compliments that have been paid me on this occasion.

After listening to Mr. Jennings I am for once glad that he went to Glasgow when he did ; if not, there is no saying where his anatomical researches might have led him. I do not know what things he would have seen if he had stayed long.

I got worried at Mr. Bywater's remark that the Association is just going out of the stage of adolescence for there passed through my mind the schoolboy's definition of "adolescence" as the stage "between puberty and adultery." (Laughter.) I am glad Mr. Thomson is there to take the first shock of the transition.

Seriously, however, I do appreciate very much indeed the compliment paid me and I wish to thank you all sincerely. (Applause.)

The PRESIDENT : The next officer we have to elect is the Hon. Secretary. As you all know, Mr. Hebeler has been our Secretary for the past three years, and according to our rules he has now got to retire because he has come to the end of the period.

I can assure you that we who have worked at headquarters appreciate very much indeed the great efforts that Mr. Hebeler has made for this Association. (Hear, hear.) He is one of the most conscientious and thorough Secretaries we have ever had. I am quite convinced about that, and I can assure you we are very sorry that we are losing him. However, he is still on some of our committees and we shall at least have his services in that capacity. Mr. Hebeler has done a grand job of work and we are all very grateful to him.

We have to find someone to succeed him and our choice has fallen on Mr. John Ingram, of Oxted. Mr. Ingram has been a member of the B.V.A. for many years and at the present time he is President of the South-Eastern Division ; he is also a member of our Technical Development Committee and he played a very active part at the Eastbourne Congress. I am quite sure he will carry out the secretarial duties in a very efficient way and I think we are extremely lucky to get such a busy and capable man to undertake those duties. So, ladies and gentlemen, I have very great pleasure in putting before you the name of Mr. John Ingram as our new Hon. Secretary.

Dr. R. F. MONTGOMERIE (Beckenham) : I should like to have the privilege and pleasure of seconding that nomination. There could obviously be a number of reasons, one of them origin of birth, but I am speaking rather as one from the south-east of England, strange perhaps as that may seem. We in that district know John Ingram as a man of very great ability, running a very heavy practice in an admirable way yet taking an active interest in the Association. We have known him as the type of person we could go to to get a very good appreciation of the importance of things, and that of course is a quality which we must always respect. This appreciation of the importance of things covers a very wide sphere and particularly, quite naturally, that of general practice.

We are very pleased that you have prevailed—may I use the word prevailed, because I know a little of the history of this—upon Mr. Ingram to accept this post. He is a big fellow, in more ways than one. I think it is very greatly to his credit that in the midst of a busy life he has said, "Yes, I am prepared to take on this job knowing the difficulties in following the most able fellow who has in the last three years been holding this office as Hon. Secretary."

I do not believe John Ingram needs much commendation to members because already he is quite well known to many, but we of the south-east are delighted that your choice has fallen on him and that he is prepared to accept. I have very much pleasure in seconding.

The PRESIDENT : Those in favour ? . . . It is unanimous.

Mr. J. R. BARKER (Hereford) : Will there be another opportunity of paying tribute to the splendid work Mr. Hebeler has done or is this the time when we might move a vote of thanks to him ? I am in your hands entirely. If this is the time then I should like to propose a very hearty vote of thanks for the services that Mr. Hebeler has rendered to the Association during the last few years. (Applause.)

You yourself, Sir, and other officers of the Association know more about it than I do, but I am sufficiently acquainted with the goings on at headquarters to know that they have been valuable services, rendered with very great personal effort by a practitioner and a very busy man. (Applause.)

Mr. A. J. Wright (Macclesfield) : I should like to have the pleasure of seconding Mr. Barker's proposition. Having commenced in harness with Mr. Hebeler and now going out of harness with him as it were, I do say most sincerely that he has done a magnificent job. For three years now everything we have asked him to do he has done willingly. He has always been ready to help us by doing all that he could and he has done it in a very able manner. He has been a great asset to this Association and I am sure we are all very sorry to lose him as our Secretary, but I know his heart is with this Association and I know that he will continue his work in the various offices that he holds and in committees and that he will still do a grand job for this Association and for the profession.

Mr. J. A. Dall (Torquay) : I also should like to be associated with the remarks made about Mr. Hebeler, particularly as I am almost a neighbouring practitioner and he is a member of the Western Counties Division. We appreciate very much the way in which he has helped our Division. He has been up in London so frequently and has done so much for the Association. It is a very hard job going from the west country to London, it is a long journey and a hard journey, and I think we must all be very grateful to him for having done so much, so well.

Mr. H. E. Bywater (Hon. Treasurer) : I should like, as the big bad wolf of the party, to associate myself with the remarks passed about Mr. Hebeler and I should like also to say a little bit about "A. J." because with my knowledge of the working of headquarters and with my experience of the various officers that have held office during the last 15 or 16 years or so I have never known two officers who have been more enthusiastic in their duties and who have spared themselves less than Mr. Hebeler and Mr. A. J. Wright. I should like personally to pay my tribute to them both.

Dr. W. R. Wooldridge (London) : As senior member of the Past Secretaries Association, I should like to speak on their behalf in paying tribute to Mr. Hebeler and in welcoming him into our midst immediately after this meeting.

Mr. G. N. Gould (Southampton) : As the Hon. Treasurer, I shall be pleased to receive his subscription.

Mr. H. F. Hebeler (Langport) : Mr. President, Mr. Barker, and ladies and gentlemen, I really must thank you for the very nice things you have said about me and for the way you, ladies and gentlemen, have received them. I shall always look back on my position in the last three years as one of the greatest privileges and experiences of my life. I have enjoyed it very much indeed and I have found everything I have had to do most interesting. The friendship and the kindness that I have received from the other officers I shall always value very much indeed. They will not take it amiss if I say that I think three years is quite enough.

There are two things that I shall always remember with considerable pride. They both occurred during my last year. A short while ago there was published an analysis of the membership of a council meeting in which the writer was able to separate those in whole-time service from those in practice, and even the research worker from the educationist, but he was not able to find a niche for the hon. secretary. I shall always feel that is the greatest tribute I have had to being impartial in anything I have had to do for the practitioner or whole-time worker, since it is my firm belief that any division of members in this way over points of major policy can only harm the future of the Association.

The other thing I shall always remember—and I hope that the Council and other members of the Association will agree with me when they see it—is that I have been associated with the present President and the other officers in the acquisition of 7, Mansfield Street, in which I personally take great pride. Thank you very much indeed.

The President : We now come to that hardy annual, the election of the Hon. Treasurer. After what has been said this afternoon and after hearing Mr. Bywater himself in action, I do not think you will want me to say anything more than that you unanimously elect Mr. Bywater to this most important office which he carries out with such efficiency and, shall I say, shrewdness too. I hope you are all agreed. (Applause.)

Professor W. M. Mitchell (Edinburgh) : May I second to put it in order. (Applause.)

Mr. Bywater : I said last year it was time you found another Hon. Treasurer. I can only come to the conclusion that there is nobody fool enough to take the job on. At the same time, I should be churlish if I did not feel somewhat gratified that you have expressed confidence in the services which I have attempted to render to the Association. I thank the members for that.

The President : Now, ladies and gentlemen, we come to the election of the General Secretary. I believe that some obscure rule requires us each year to make a nomination for this position, and I have very much pleasure in putting Mr. Knight's name before you again. You all know Mr. Knight, and I think that if you were at Gordon Square you would appreciate the great amount of work he does for us there. He keeps us right in the many difficult jobs we have to do. We come into this office rather green but we soon learn from him. Mr. Knight has been a great help to me, a very great help indeed, and I have very great pleasure in putting his name forward as General Secretary for the ensuing year. (Applause.)

Mr. H. F. Hebeler (Langport) : Mr. President, as one of my final duties from this table, I should very much like to second that proposition. I should like to add my tribute to yours to the work of Mr. Knight. He has been extremely kind to me personally. His knowledge of the affairs of the Association is quite encyclopaedic and I know we could not possibly do without him.

The President : You have heard that proposition. Those in favour ? . . . Against ? . . . Carried. (Applause.)

The General Secretary : Mr. President, ladies and gentlemen, I feel greatly honoured by again being elected as General Secretary and I thank you most sincerely for the very kind way in which you have endorsed the Council's recommendation. I also appreciate very much, Sir, the remarks you made in putting the proposition forward and also the remarks made by Mr. Hebeler.

It would be impossible to carry out the many duties of the office without a great deal of help and, therefore, if I may be allowed, this seems to be a suitable opportunity for me to express my appreciation and thanks to Miss Smith, Mr. Fredericks and the other members of the staff for their loyal co-operation and valuable assistance at all times. Perhaps it is hardly necessary for me to say that the closest collaboration has continued between Mr. Brown and myself. (Applause.)

The President : We now have to elect the auditors, and I propose that Messrs. Fairbairn, Wingfield & Wykes be elected the Association's auditors for the coming year.

The motion was formally seconded.

The President : Those in favour ? . . . It is carried.

Conferment of Honorary Life Membership upon Mr. G. H. Locke

We now come to item 8 (the President continued) "To consider and, if thought fit, approve the following recommendation of the Council :

That Mr. G. H. Locke, M.R.C.V.S., be elected an Honorary Life Member of the Association."

I think perhaps I should call on Mr. Barker to speak to this motion.

Mr. J. R. Barker (Hereford) : As the mover in Council of the reference of this to the Annual General Meeting, I accept your invitation to speak to it. Mr. Locke is a very respected practitioner in Manchester and carries on a very long line of general practitioners. I understand he is the grandfather of a veterinary surgeon and he himself was also the grandson of a veterinary surgeon. That alone would not commend this motion, but he was at one time President of the Royal College of Veterinary Surgeons and he took a very active part in the affairs of the veterinary profession. Now that he is rather in declining years I would commend to you that it would be a very nice gesture on the part of this Annual General Meeting to make Mr. Harry Locke an honorary life member of this Association.

Dr. W. R. Wooldridge (London) : May I have the privilege of seconding. When I first became interested in what was then the National Veterinary Medical Association, Mr. Locke was always available and ready to help the younger men who were just beginning and to encourage them in taking an interest in the profession. At one time he was an annual visitor to these gatherings and I should like to second the proposition moved by Mr. Barker.

The President : You have heard the proposition moved by Mr. Barker and seconded by Dr. Wooldridge, that Mr. G. H. Locke, M.R.C.V.S., be elected an honorary life member of the Association. Those in favour ? . . . Against ? . . . Thank you. It is the unanimous wish of members that Mr. Locke be given this most treasured award and it gives me very great pleasure to announce it.

The motion was carried with acclamation.

Application of the V.M.A. of Ireland

The President : The next item is item 9, to confirm the recommendation of Council, that the Veterinary Medical Association of Ireland be granted affiliation under Article 23 of the B.V.A. Memorandum and Articles of Association.

I do not think, ladies and gentlemen, that we need say a great deal about this other than that I hope to be able to welcome our friends from Ireland back into the fold. As you remember, when we did change our title two or three years ago they found at that particular time they could not continue with us, but after reflection I think it has been realised that a division of that sort really was something that must be rectified. I am very glad to inform you that they would like to become an affiliated association of the British Veterinary Association and I have very great pleasure in putting it to you that the Veterinary Medical Association of Ireland be granted affiliation under Article 23 of the B.V.A. Memorandum and Articles of Association. (Applause.)

Mr. McLean (Belfast) formally seconded.

The President : Those in favour ? . . . Against ? . . . The motion is carried.

Special Resolution—Articles of Association

We now come to item 10, to consider and, if thought fit, pass the following resolution which will be proposed as a special resolution of the Association and which is supported by the Council :—

That Article 25 of the Articles of Association be amended to read :—

"Subject to Article 27 hereof any 20 or more members may associate themselves together and apply to the Council for approval to form a Division of the Association on the grounds of geographical location or of sectional professional interest and any number of Divisions may group themselves together and apply to the Council for approval as a Branch of the Association."

This alteration in our "Articles" was debated by Council and gone into very thoroughly and it is now Council's recommendation that it be put to you, ladies and gentlemen, for your approval. I do not think there is any need to enlarge upon it. It is quite clear in the resolution what is meant and I have very great pleasure in proposing this from the chair.

Mr. H. F. Hebeler (Langport) : May I second that resolution.

The President : Those in favour ? . . . Against ? . . . Thank you very much.

The motion was carried.

Matters Referred from Council

The Steele-Bodger Memorial Fund

The President : Item 11 is to report any other matters referred from the Council, including the handing over to the Council on September 9th, 1953, of the trust deed of the Harry Steele-Bodger Memorial Fund and rules and regulations for its administration, by the Chairman of the Appeal Committee.

As you are all aware, ladies and gentlemen, this fund was started to perpetuate the memory of the late Harry Steele-Bodger and it was sponsored by the B.V.A. We had a very active Appeal Committee, the officers being Mr. Gould, Mr. Hignett, Dr. Lovell, and Miss Smith as Secretary, and as a result of their great work and of the generous response which the profession and others made, a very magnificent sum of money was collected, the purpose being to use it to enable young graduates from time to time to travel abroad and see veterinary work in other countries.

The fund has now been closed and, as item 11 tells you, the trust deed rules and regulations connected with the administration of it have been handed over to the Association and a Committee of Administration has been formed to deal with the fund and the allocation of money from it. We are very proud of the magnificent response to our appeal and our warm appreciation and thanks are due to the officers and members of the Appeal Committee who were responsible for making this fund such a great success by collecting such large sums of money both from the profession and from those outside who were friends of the late Mr. Harry Steele-Bodger. I have very great pleasure in reporting this to you, ladies and gentlemen. (Applause.)

There is just one matter which Mr. Wright has drawn my attention to. A lot of the work of preparing the rules and regulations in connection with the administration of the fund was done by a solicitor in Southampton and our grateful thanks are due to him for doing this. I may say that he did it all free of charge and we are greatly indebted to him. (Applause.)

We now come to item 12, any other matters that may properly be considered at an ordinary general meeting. The Secretary informs me that he has got nothing for consideration, but, ladies and gentlemen, it is up to you if you have anything to bring up. (Pause.)

Adjournment

If there is nothing more under item 12, I now adjourn this meeting until Saturday, September 12th, at 10 a.m.

Thank you very much for your attendance here to-day.

THE VETERINARY RECORD
October 31st, 1953

THE ASSOCIATION AT ABERDEEN

"ANOTHER triumph for Aberdeen"—so runs the verdict passed on this year's Annual Meeting and Congress of the Association by those with memories of the phenomenally successful gathering held there in 1924. Such an outcome, of course, is the product of good team work, but that our second visit yielded a conference worthy of Coronation Year is primarily a triumph for the North of Scotland Division. Indeed, from the outset our sturdy host society, of long and honourable tradition, refused to look upon the decision of the parent body to accept its invitation as in any sense a venture of faith, but as a gesture of confidence in the achievement of an assured success—and so it proved.

It is particularly gratifying to record that, in a meeting thus acquiring historic importance through an external event of national character, a personal triumph was gained by the first member of the staff of the Ministry of Agriculture to occupy the presidential chair; also the complete success of another innovation—the securing of so attractive and knowledgeable a parliamentary figure as Lady Tweedsmuir to support the Lord Provost and, in fact, to open the proceedings of Congress.

Doubtless the primary purpose of our conference, as of the Association itself, is advancement of our art and science, yet the combination of a convivial, controversy-free atmosphere with a liberal accompaniment of sunny hours, such as we enjoyed at Aberdeen, seems at least as essential to its success as a fine series of papers, discussions and demonstrations. For good measure, we had these too, in particular welcoming an American colleague, Dr. Scheidy, as a contributor to the discussion of the fashionable topic of the day—the rôle of antibiotics in veterinary medicine and animal nutrition. This theme of scientific encouragement to food production had been coupled by Lady Tweedsmuir to a plea for the extension to England and Wales of the system of veterinary inspection of home-killed meat which obtains in Scotland and in many other countries. The response of the delegates was immediate and doubtless it was this reaction, repeated when the President, in his address, stressed the public health importance of this matter, which attracted the notice of the Press. The headlines duly reappeared when this disparity was emphasised further by the Secretary of State for Scotland at a banquet made memorable by the presence of two Ministers of the Crown. The other Minister, Sir Thomas Dugdale, making his first public appearance subsequent to his elevation to Cabinet rank, signalised the occasion by not only announcing the total freedom of the British Isles from foot-and-mouth disease, but warmly congratulating the Chief Veterinary Officer and the Animal Health Division of his Ministry upon its magnificent achievement in this connection.

A number of our officers and other members had arrived at Aberdeen almost direct from the great veterinary congress at Stockholm where, as was recorded in these columns at the time, there was "always more to do than could possibly be achieved." Here, it would seem, is one aspect in which the "domestic" event scores heavily over the "international," for while, with a compelling scientific and social programme, all wearers of the B.V.A. badge were kept fully occupied throughout the week, no one felt under any compulsion to rush around lest something worth while should be missed. The series of events was unfolded in orderly, convenient fashion, enabling everyone to absorb scientific facts—and fancies—or to enjoy the recreational and scenic joys of Aberdeenshire (with a very high standard of creature comfort) as dictated by personal taste or whim.

Focusing impressions after this sufficient lapse of time, the over-all picture of the Aberdeen Congress of 1953 gives a sense of deep satisfaction, deriving largely from the all-pervading atmosphere of good fellowship and geniality. From the scientific point of view this year's meeting may not, in the eye of history, enjoy quite the status of the gathering held in the same "silver city" nearly 30 years ago, which provided a stimulus to the study in this country of the subject of sterility in animals. Yet it well may leave a scientific legacy of scarcely less moment to the national larder in the fillip undoubtedly given to the intensive study of our most rapidly maturing animal—the now not so humble pig. On the other hand, the future may reveal immense significance to attach to the President's call for the appointment of a Veterinary Research Council analogous to the Medical Research Council; or, again, that dynamic value for posterity resides in his tilt at the official conception of what is "ethical" in the ticklish sphere of publicity where members of the profession and its organisations are concerned: "There is such a thing as hiding one's light so closely under a bushel that there appears to the outsider to be no light at all."

These aspects, and many others, are featured in this issue. What we cannot hope adequately to reflect are the sense of gratitude manifested at the closing meeting to the President for his leadership throughout the year, and of confidence in his successor and the remaining officers; the indebtedness of all to the Provisional Committee for that personal effort which alone can produce such precision in the carrying out of a modern Congress programme; to the Lord Provost and his lady, who lent both civic dignity and good fellowship to what they saw rightly as a joint enterprise, and to those high Officers of State who honoured the Association with their presence.

It is fashionable to-day to adopt an attitude of scepticism as to the value of the innumerable conferences which are a feature of this "scientific age," but those who had the duty of expressing the thanks of the Association spoke with a sincerity clearly in tune with the feelings of the members. These, as voiced to us, were indeed a happy augury for the achievement of even greater success for another return visit—that to be paid by the Association to Torquay next year.

Lady Tweedsmuir with the President and Dr. Alastair Greig, Local Hon. Secretary.

ALEX. THOMSON, M.R.C.V.S., OF GLASGOW
President of the British Veterinary Association, 1953-54

Alex. Thomson, our new President, has his roots deep in the West of Scotland. Born in Glasgow, he attended one of its well-known schools, Allan Glen's School. Apart from a short period in King's School, Chester, he received most of his preliminary and professional education in the West of Scotland. While at school and college he lived in the country, outside Glasgow in the Drumchapel area, and as a child he knew and loved the Kilpatrick hills and the wild stretches of country in the north-west area of Glasgow. His parents had close associations with the island of Islay and he had many opportunities of becoming familiar with the manners, speech and farming of this island. Gaelic was not his native tongue but he has acquired and retained as much as allows him to toast his innocuous drinks in the ancient language. At school he played rugby and has always been interested in fishing but pressure of work has tended to make his fishing an academic hobby except during his short holidays.

When he qualified in 1927 Alex. Thomson joined the college staff, assisting Principal Whitehouse, and after six months he went to S. J. Motton, of Penzance. He remained there only for 15 months and during this period he developed a friendship with his principal which continued until the latter died last year. Here he acquired an interest in clinical matters on a very practical basis which he later developed in his own practice. He returned to Glasgow as assistant to the late George Weir, with whom he had previously seen practice, and later became his partner. In his own practice he combined practical experience with scientific enquiry, a combination not too often found. He has a great interest in the well-being of his patients and is prepared to go to great trouble on their behalf.

He is a part-time teacher in the college and was one of the band of practitioners in Glasgow who helped to keep the college going during the lean years in the 30s. Innumerable students have passed through his hands in his capacity of teacher and he has always welcomed students to see practice.

It has been said that it is only busy people who can find time to add to their present duties, and this is certainly true of Alex. Thomson. He has many interests outside the profession but all of them relate to public service. Inevitably he gravitated towards Rotary and he has taken a prominent part in the Glasgow Club, particularly in community service.

Our President has always taken an active interest in the affairs of the profession and he has been Secretary of the West of Scotland Division of the Association since 1932. His interests have been both local and general. He has been President of the Scottish Branch and all members of the profession will know of his activities as Local Secretary of the Glasgow Congress in 1938. He was also on the Provisional Committee of the Congress at Edinburgh in 1934 and 1948. It is not surprising, therefore, that he has now become President of our Association. Any man who brings to this task the experience of a practitioner, of a teacher, of a scientist, of one interested in the political affairs of the profession, and whose outstanding quality is good sense and an integrity which is not merely present but is recognised by his colleagues, is obviously well equipped for this high office.

Nowadays the post of President of the British Veterinary Association is an extremely onerous one but Mr. Thomson can count on the full co-operation of his colleagues, by whom he is liked and who will do everything to assist him in his difficult task. He should make a good chairman at our Council meetings where often difficult matters are under discussion, and can be expected to give an unbiased view and keep the best interests of the profession as a whole in mind. He is firmly imbued with the principle that the profession, in view of its many privileges, has as a primary duty a service to perform to the community, a principle he applies in his own practice. Leadership of this nature can only redound to the credit of the profession.

Mr. Thomson was married in 1936 to Miss Janet Marion Paton, daughter of the late John Paton, C.E., and Mrs. Janet Paton. Mrs. Thomson takes an active part in the practice and has been a regular attender of our Annual Congresses. In 1951 she was President of the Ladies' Guild and she can be expected to maintain the high tradition that has been set for presidential wives. W. L. W.

SHEEP BREEDERS PRESS FOR MORE FUNDS FOR VETERINARY RESEARCH

Mr. Hubert Parry's Address at Scarborough

Over 100 delegates from sheep breeding societies attending the annual conference of the National Sheep Breeders' Association, held at Scarborough on October 19th, 20th and 21st, agreed that the Minister of Agriculture be asked to consider spending more money for veterinary research on sheep diseases. In this they supported the lead given by the Chairman of the Association, Sir William Prince-Smith, who, in introducing Mr. Hubert Parry, M.A., M.R.C.V.S., of the Animal Health Trust, stressed the need for more research on sheep husbandry and diseases and of money for this purpose.

Mr. Parry, whose address was entitled "Your Sheep and Their Health," spoke of the practising veterinarian as the sheep farmer's first line of defence; he would know local conditions and how best to deal with the usual run of problems there. If a problem arose requiring further enquiry he would call on the Animal Health Division—either its Veterinary Investigation Service in his area, which was based on the central laboratories at Weybridge, or the Veterinary Officer Service. Should the problem be due to a recognised or scheduled disease, it would go to the latter—and here Mr. Parry paid tribute to the work of the Animal Health Division for their successful campaign against sheep scab. The third line of defence dealt with more specialised problems of research: it comprised such institutes as that at Moredun, which had done pioneer work on sheep disease for many years, the Compton Field Station of the Agricultural Research Council and the Rowett Institute. The Animal Breeding Research Institute, centred at Edinburgh, dealt with breeding problems, while the university schools and agricultural institutes were studying problems of sheep health, and the Animal Health Trust, an independent organisation, had commenced work on sheep problems. Finally, the research departments of certain of the large pharmaceutical houses had made important contributions of new drugs and biological products for use in sheep diseases.

Mr. Parry then reviewed some of the advances in the sphere of veterinary ovine medicine made in the last 25 years and passed to the consideration of three current problems—orf, or sore mouth, foot-rot and the management of in-lamb ewes. Twin lamb disease (pregnancy toxaemia) was probably the biggest single cause of loss in pregnant ewes and of weak lambs in most areas. The most common cause was some sudden change in the quantity or quality of the feed, but the increase in incidence could not be dissociated from changes in farming practice and management. "I am convinced," said Mr. Parry in conclusion, "that many of the problems of sheep health in general and of the in-lamb ewe in particular, which have come into prominence in the last few years, are closely connected with the changes in traditional husbandry methods which have come in the last two decades with the new and improved varieties of feed plants and the more liberal use of chemical fertilisers, about the effects of which on the nutritional and chemical composition of the plant so little is known. We have yet to learn how best to manage these new food plants, particularly the leys, and to modify our traditional shepherding practices to meet the new conditions. The solution of these problems will require the good will and co-operation of all of us—shepherd, flockmaster, agriculturist, veterinary surgeon and scientist—if we are to find effective solutions quickly, and I am sure that the close and accurate observations of the practical man in the field can be of the greatest value to our understanding of these unsolved problems of sheep health."

Mr. Parry's paper provoked a very lively and interesting discussion and (comments our observer) "one gained the impression that sheep breeders, as a whole, are only too keen to collaborate with the veterinary profession in the study of disease in these animals."

Elliott & Fry, Ltd., Baker Street, W.

ALEXANDER THOMSON, M.R.C.V.S.

President of the British Veterinary Association, 1953-54.

PAPERS PRESENTED TO CONGRESS

The uniformly high level of attendance at the sessions devoted to the discussion of the scientific papers presented to the 71st Congress of the Association was a tribute alike to the standing of the essayists and to the appeal of the subjects selected by the Provisional Committee. In this issue we reproduce the first and second of the papers considered, together with the discussions upon them. Next week's issue will contain the succeeding paper on "Veterinary Application of Antibiotics and Other Modern Therapeutic Substances," by Drs. S. F. Scheidy and C. E. E. Bunn, of Pennsylvania, U.S.A., together with a report of the discussion, opened by Mr. D. D. Ogilvie, B.Sc., M.R.C.V.S., of Manchester. Further papers and discussions will appear in successive numbers, *viz.*, "Some Aspects of Veterinary Dermatology," by Mr. S. Jennings, M.R.C.V.S., University of Glasgow; followed by the symposium of short papers presented on the Friday morning: "Some Aspects of Research Work at the Poultry Research Centre, Edinburgh," by Dr. J. G. Campbell, F.R.C.V.S., of Edinburgh; "The Use of Monozygous Twins in Experiments with Cattle," by Mr. J. A. Crichton, M.B.E., M.A., B.Sc., of the Rowett Research Institute; "Muscular Dystrophy," by Dr. K. L. Blaxter, B.Sc., N.D.A., of the Hannah Dairy Research Institute, and "Antibiotics as Supplements to the Ration of Farm Livestock," by Mr. W. S. Gordon, C.B.E., M.R.C.V.S., F.R.S.E., and Mr. J. H. Taylor, M.R.C.V.S., of the Agricultural Research Council's Field Station, Compton, Berks.

No. 1.—RECENT ADVANCES AT WEYBRIDGE*

BY

A. W. STABLEFORTH, D.Sc. (Lond.), M.R.C.V.S., D.V.S.M.

Director, Ministry of Agriculture Veterinary Laboratory, Weybridge

On the afternoon of Monday, September 7th, the delegates reassembled in force in the Music Hall, Union Street, Aberdeen, for the discussion of the opening paper to Congress, that by Dr. A. W. Stableforth, the Director, recording recent advances at Weybridge. Professor Alex. Robertson, M.A., PH.D., B.Sc., M.R.C.V.S., F.R.I.C., F.R.S.E., of Edinburgh, was in the chair and the Recording Secretary was Mr. L. G. Donald, B.Sc., M.R.C.V.S., of Bucksburn, Aberdeen.

The Chairman: My first duty is to express appreciation of the fact that so many of you have resisted the counter attractions of the city and the glorious weather and have come to our own meeting. I am quite sure, from what I know of our speaker and from what I have seen of the paper, that you will not go unrewarded.

There is a rumour that people from the north-east of Scotland are inclined to be somewhat clannish, as they say; in fact, some of them are believed to subscribe to the notion that if you removed from the map of this country Aberdeen and a small area round about, there would not really be much worth while left. Just to show that that idea was not in the minds of the organisers of this Congress, they have gone for their opening speaker right to the other end of the country. Dr. Stableforth, who is going to address us, was born and educated in the south-west of England, and they could not have gone much farther than that. (Applause.)

Dr. Stableforth needs no introduction to a veterinary audience. If there are any here who have little veterinary connection, all I need say is that as they will see in a minute or so when he gets up to speak Dr. Stableforth is one of the most outstanding members of the profession in more senses than one. The most interesting feature about him from the point of view of this Association, however, is the fact that in spite of his academic and research achievements Dr. Stableforth has never lost the common touch, if I may use that phrase: he has always kept in contact with the rank and file of the profession, partly through association with the activities of the B.V.A., particularly its Technical Development Committee, and also by direct contact with many practitioners who have had occasion to consult Weybridge on the numerous problems with which it deals.

As those of you who have had time to study the paper will have noticed, he has in his paper to-day put down a great deal of information which is of intense interest and of great practical value to those members of our profession whose activities lie in the field of farm work. On the paper before us, which touches on many, many aspects of veterinary practice, doubtless a number of you will wish to ask questions, so I do not propose to stand between you and the speaker any longer but will ask Dr. Stableforth to spend a few minutes opening his paper.

Dr. Stableforth: Thank you, Sir, in the first place, for your kind introduction. I do appreciate very much the opportunity to come and talk to you here and to tell you something about the work of my colleagues at Weybridge because quite obviously that is just what I am doing. I have confined my remarks mostly to Weybridge because it would be impossible to deal with all that goes on at the other centres linked up at Weybridge. I shall no doubt refer at times to things they do, but they will forgive me I am sure because their work is so closely linked up with ours.

When I was asked to give this paper I thought the most useful thing I could do would be to confine the paper mostly to matters which would have some fairly close connection with practice and I have left out more long-term or fundamental matters because, although we quite deliberately deal with these—since we have to understand the underlying processes of many things and also because it keeps our people in touch with the latest developments—I thought it would be better if I kept to the more practical aspects. I have been warned that in giving you a paper of this kind I have laid myself open to a very wide barrage of questions. I shall do my best to answer anything I can. I did get worried this morning when I heard so much about fish and questions on fish I shall have to bar. I was not going to say very much by way of introduction, but the Chairman has reminded me that it might be as well to run over some of the more important points, in case people have not had time to look at the paper.

(Dr. Stableforth then gave a summary of his paper.)

Dr. Stableforth, in concluding: I have picked out some of the more important things in the paper and think it would be best if I left it at that and just waited for questions. Thank you. (Applause.)

When your Committee invited me to contribute a paper on "Recent Advances at Weybridge," I was faced with the question what to include and what to leave out. It was clear that if my contribution was to be much more than a catalogue of our work I should have to

* Presented to the 71st Annual Meeting and Congress of the British Veterinary Association, at Aberdeen, on September 7th, 1953.

be severely selective and pay much less attention to the work of many of my colleagues than I would have liked. I thought, however, that the most useful contribution I could make for discussion would be one in which I kept mainly to matters of direct bearing on current practice, and made less reference to the fundamental or long-term work which with intent forms a large part of our programme because we hope it will provide new knowledge of method and fact with which we can build later. I shall also not be able to include work being done at Lasswade, at our A.I. centres at Reading or Ruthin, or by officers of the Veterinary Investigation Service at our regional laboratories, except in so far as work is specially associated with investigations at Weybridge.

Johne's Disease

A survey we have made in recent years has emphasised the great economic importance of Johne's disease and it appears to be increasing. The period of greatest susceptibility appears to be in calfhood (in the writer's opinion probably via milk contaminated with faeces), but recent experiments have confirmed that animals can be infected by large doses at five or six years of age. Many infected animals never show clinical signs and nutrition may play an important part. Three approaches are possible, *viz.*, the raising of specific resistance by vaccination, attempts to raise general resistance by attention to nutrition especially in young stock, and eradication. Experiments begun in 1946 with a living *M. johnei* vaccine in an oily vehicle now include 80 herds with nearly 5,000 vaccinated animals, of which about 1,000 have had one calf, 1,000 two calves and 500 three calves, respectively. Exposure is provided by the older animals of the herds and amongst these about 3 per cent. yearly have died of confirmed Johne's disease, whilst another 2 per cent. died suspect (no tissues available for confirmation). Confirmed and suspect cases in the vaccinated animals are so far about one-tenth of these figures. These results are promising, but the fact that the vaccinated animals are on the average three years younger and that only half have yet calved makes it too early to draw conclusions. An important disadvantage of the vaccine is the sensitivity it produces to tuberculin. A modified vaccine which does not cause a vaccinal nodule and which in calves produces only a slight reaction to tuberculin is being tested.

A study is also in progress on the value of a complement fixation test in which an antigen of living *M. johnei* is treated with the serum under test, centrifuged, resuspended in saline and then mixed with the complement. This test can only be used in tubercle-free herds because of the cross-reaction which cannot be avoided. With this proviso, it has proved of great value; in suspected cases, examination of *post-mortem* material has shown an accuracy of about 90 per cent. Less is known yet about its value for detecting infection in the preliminary stages, because *post-mortem* material from such cases becomes available much more slowly. In a few herds in which reactors have been killed, it has proved of high accuracy, but how much infection is missed or non-specific reaction obtained, is not yet known. Reactions appear to take up to nine months from infection to develop.

Vibriosis

The experiments described at the last Congress are now nearly completed. Details were then given of the conception results in the various groups of heifers and of the very wide differences between the average number of services or inseminations needed in the heifers served by or inseminated from the uninfected bull or with his semen plus filtrates from the semen of the infected bulls or in those animals in which *V. fetus* was administered by mouth or on to the conjunctiva and, on the other hand, the heifers served or inseminated by the infected bulls, or inseminated with clean semen plus *V. fetus* culture.

One of the most striking features of these experiments is the way in which the natural course or picture of vibriosis on the farm has been reproduced. There is the initial period of failure to conceive, animals returning two, three, four, five, six, or even seven times or possibly more and then settling, the uneventful pregnancy which follows except in a small minority in which an abortion occurs at anything from a few months to late pregnancy, the almost purely venereal transmission, the very long period during which bulls remain infected (or during which they become continually reinfected), and—an important observation—the finding of heavy *V. fetus* infection in the post-parturient discharges of an animal which has calved normally; a fact which, with the development of tolerance in most females and the lack of symptoms in bulls, helps to explain the very extended course of the disease, often almost silent, in some herds, and its insidious spread to others.

Other points of considerable scientific and practical interest are the decreased mucus agglutinin titres at the oestral period and very much greater proportion of positive cultures obtainable at this time; phenomena exactly similar to those found in trichomoniasis. Another point of importance is that, in the natural disease and in animals infected by the genital route, agglutinins appear fairly early in the vaginal mucus and only late and erratically in the blood; whereas when cultures are administered *per os* or conjunctiva, agglutinins appear in the blood and not in the vaginal mucus.

Further work is planned on the addition of antibiotics to semen and on the treatment of females.

Brucellosis

Results with S19 continue in general to be satisfactory. A small number of complaints are received and special examination is being made of a few strains from herds in which there appears to have been a genuine breakdown to see whether the strain is of unusual virulence or kind. Experiments on storage and transport of vaccine in various ways have shown that it can safely be carried in the car for a day or so after being in cold store for two months and that it withstands longer storage and transport reasonably well. It is recommended, however, that it should not be stored for more than two months in the cold and should be used as soon as practicable after removal. Experiments with freeze-dried vaccine have been in progress for some time and a large-size production plant is now being tested.

A study is also being made of the Milk Ring Test for brucellosis. This test is a relatively simple one, carried out with churn samples of milk and a stained antigen, and has already been adopted in several other countries as a screening test in eradication programmes, especially for checking believed clean herds and areas. When a positive result is obtained, a herd test is made. A large part of our tests have been made in co-operation with Compton on animals of known history in their experiments. We have found no positives in unvaccinated animals and in animals vaccinated at one or all of the following ages, *viz.*, 6, 12 and 18 months, and not exposed to infection, positive reactions are also few; in six tests on 185 vaccinated but uninfected animals, five positive results were seen. There were, however, 48 borderline results, in contrast to three

in 45 unvaccinated animals. Analysis of the results in infected animals is not yet complete but they are positive in about 70 per cent. of total tests. Whey agglutination tests also gave about 70 per cent. of positive results. A Milk Plate Test made with the same stained antigen as is used for the Ring Test was also tested and was positive in 94 per cent. of tests but in this series of tests gave a higher percentage of false positive reactions in negative animals than did the Ring Test. The Whey Test gave no false positive results.

In certain of the V.I.O. centres all bulk milks sent for biological tests are being Ring tested. Nearly 46 per cent. have given positive Ring tests, of which about 18 per cent. have proved positive for brucella biologically. Tests are also being made on the value of a dilution test in the detection of individual excretors.

A good deal of co-operative work on characterisation of strains, standardisation of tests and methods in general is being done in our capacity as one of the FAO/WHO brucellosis centres. We have for some time been responsible for the international standard *Br. abortus* antiserum and have recently been asked to hold and distribute international type strains.

Bovine Mastitis

Transmission experiments with *Str. agalactiae* have shown that animals which have been infected but in which the infection has been sterilised are more easily reinfected than others, that some cows repeatedly resist exposures which infect others every time, but that most cows become more susceptible with age. Attempts to correlate susceptibility or resistance with bactericidal powers of milk or blood were unsuccessful. In similar experiments with haemolytic staphylococci, heifers were more easily infected than cows. Clinical symptoms and clots in the secretion were less than with *Str. agalactiae*. Herd treatment with aureomycin (four successive days) was successful in 17/18 quarters which had been infected at least six months and after removal of the infected animal the herd remained free for 18 weeks (end of observations). Micrococci and diphtheroids were also markedly reduced. Reaction to the repeated aureomycin, however, was severe and only a single dose, with repetition after 48 hours if necessary, is recommended.

Surrey Scheme.—An attempt to establish *Str. agalactiae* free herds on a county-wide basis was begun in 1949. The results are shown below :—

	1949		1950		1951		1952	
Infected ...	373	62%	172	28%	114	20%	66	13%
Negative ...	232	38%	433	72%	470	80%	429	87%
	605		605		584		495	

Whilst a high proportion of infected herds were freed relatively easily, there is a hard core in which it is difficult. The reasons include reluctance to get rid of cows which resist treatment, lack of hygienic measures, teat sores and infections which appear to be cured but recrudesce at a late stage, but in some cases the reason is far from obvious. Intramuscular treatment of resistant *Str. agalactiae* cases has usually failed. Results were best in machine milked herds not hand stripped and poorest in hand milked herds. Herds once free have generally remained free. Clinical mastitis has usually ceased and yields have improved. Other forms of mastitis have occurred in some herds. They are associated with one or other of a variety of organisms and commonly respond to alterations in milking methods, particularly the prompt removal of machine cups when milk ceases to flow, especially if these are of the hard moulded kind.

Dibromo-propamidine sulphathiazole and aureomycin both proved valuable in acute staphylococcus infections and also removed many chronic infections. Recrudescence or reinfection, however, was common.

Of 2,005 samples received in 1952 from clinical cases of mastitis in other herds, 18 per cent. were due to *Staph. pyogenes*, 12 per cent. to *Str. uberis*, 9 per cent. to *Str. agalactiae*, and 8 per cent. to *Str. dysgalactiae;* 27 per cent. were negative and the rest various. The high proportion of negatives are probably largely due to treatment before sampling and the low proportion of *Str. agalactiae* to the general reduction by penicillin.

Tuberculosis and Tuberculin

Examination of animals or material from attested herds in which unexpected or indefinite reactions have occurred has shown a few points of interest : several cases of infection with a strain of human type, infection of a shoulder lymph gland probably as the result of an injection, primary genital infection. Cases of primary udder tuberculosis have practically disappeared in recent years following introduction of the tube method of udder injection.

The tuberculoid type of mastitis which sometimes follows the use of oily udder injections has already been reported. Cases continue to occur occasionally. The acid-fast organisms concerned are innocuous when injected via the teat in saline but when in an oily vehicle grow between the exterior of the oil globules and the tissues and produce a tuberculoid reaction. The animal does not react to tuberculin.

Research on tuberculins is continuous, with the object of improving production and, especially, increasing specificity. Tests of a bovine tuberculin in large groups of bovines have not so far shown it to have any advantages over tuberculin produced with human strains. The finding that tuberculin from different variants of one of our avian strains can have different activities per mg. P.P.D. has given rise to much new work.

Methods of assay are also of great importance and recent work has shown the marked difference in results obtained with the same tuberculin when tested in animals sensitised in different ways. Here again the laboratory has collaborated on, the setting up of international standards and has undertaken to supply the material for the proposed standard for avian tuberculin to be established by the Committee on Biological Standards of the World Health Organisation.

Q Fever

Continuation of the survey described last year has shown infection in nearly every county from which sufficient samples have been obtained, the infection rate in these counties being from nil to 16 per cent. The overall herd rates for milking herds in England, Scotland and Wales were 5·7, 1·7, and 3·7 per cent. respectively. Of 1,247 cows from which individual samples were obtained 1·12 per cent. were infected.

We are also co-operating in the establishment of an international standard Q fever antiserum.

Hypomagnesaemia in Bovines

Hypomagnesaemic tetany can be a serious cause of anxiety and loss in calves, in heifers and dry cows on win-

ter pastures and in lactating cows on lush spring and autumn growth.

Recent collaborative work with the N.I.R.D. has shown that the incidence and severity of hypomagnesaemic tetany in lactating cows grazing cocksfoot and clover leys was greatest on plots heavily top-dressed with ammonium sulphate. Although hypomagnesaemia without clinical symptoms occurred on plots top-dressed with potash, it was not as severe as on the high nitrogen plots. Grazing of plots which received a nitrogen dressing but which had been given a heavy application of calcined magnesite the previous spring, resulted in only slight hypomagnesaemia without clinical symptoms. These observations require confirmation on larger numbers of animals but are nevertheless interesting preliminary results.

Other trials in two herds showed that hypomagnesaemia was prevented by daily oral supplements of 2 oz. calcined magnesite; on one of these farms lactating cows on a rapidly growing cocksfoot and clover ley were concerned; on the other, heifers and dry cows at grass during January and February. The striking finding which emerged is that whilst in hypomagnesaemic animals the serum magnesium rises rapidly after ingestion of the magnesium supplement, it falls equally rapidly (within 48 hours) after administration ceases, even when this has been maintained for several weeks. Magnesium flushing must therefore be continuous during susceptible periods. Of two other herds in which the pastures had been given heavy dressings of nitrogen, similar flushing was ineffective in some individual animals in one but completely effective in the other.

Claims have been made that the injection of magnesium sulphate or feeding of small quantities of magnesium oxide causes an increase in butter-fat, but work in conjunction with the National Institute for Research in Dairying has lent no support to these claims.

Hypocuprosis

Hypocuprosis of bovines occurs in many parts of Great Britain and a survey made a few years ago showed that about 25 per cent. of 200 herds examined in England and Wales and 70 per cent. of 200 farms in a known badly affected area (Caithness) were affected.

It affects cattle of all ages but symptoms are most marked in the young animal. Clinical signs are various. Growth rates of calves and yearlings are depressed by about one-third, the animals are late in maturing and the calf crop is often reduced and delayed. The disease occurs on soils of various types, but is not associated with a copper deficiency in the herbage.

It is a "conditioned" deficiency, and we are investigating in calves and sheep the nature of the factor or factors which reduce the availability of the copper in the herbage or interfere with its metabolism in the animal. Excess soil molybdenum is known to reduce copper storage in the body, *e.g.*, in "teart" areas, and our investigations include copper-molybdenum relationships, but there is no excess of molybdenum in most of the areas where hypocuprosis occurs.

The age at which the condition occurs, its severity and also the most appropriate method of prevention depend largely on the methods of feeding and management. Symptoms in calves can be prevented by dosing the cows; yearlings can be given a daily copper supplement, *e.g.*, as anti-teart cake. Top dressing of pastures with copper sulphate shortly before the growing season is another method but it may need to be repeated according to local soil and weather and the degree of the conditioning factor. The danger of copper poisoning has to be remembered if the pastures are to be used for grazing sheep.

Parasitic Bronchitis

Observations in recent years in both cattle and sheep have shown that severe symptoms and sometimes death may occur within a few weeks after exposure to infective larvae, *i.e.*, whilst the worms are still only a few millimetres long and unlikely to be seen at an ordinary *post-mortem* examination. In some outbreaks, worms in these early stages have been found although the cattle have been housed for some weeks. The symptoms may be marked coughing or of an emphysematous type similar to that in fog fever. The latter syndrome has recently been produced in experimental lungworm infestations in calves.

Field studies seem to indicate that the silent carrier is of considerable importance in the initiation of outbreaks and laboratory studies have shown that in favourable circumstances a small number of carrier animals can quickly give rise to a dangerous level of herbage infestation.

Other work has shown that *Dictyocaulus* larvae survive in herbage for only a month in spring and summer and up to three months at other times. They do not migrate more than an inch or two even in wet weather and do not climb the herbage. Spread is believed, therefore, to be mainly due to the animals themselves or to such factors as chain harrowing in damp weather, which appears to be contra-indicated.

Recent work on resistance suggests that in addition to "self cure" (*vide infra*) and inhibition of development, some mechanism—probably sited in the mesenteric glands—seems to prevent newly acquired larvae from reaching the lungs.

Parasitic Gastritis

Investigations made a few years ago in sheep in which pure infestations of *Trichostrongylus axei* had been produced experimentally, showed that infested sheep on a low nutritional plane all died, whilst those fed on a high plane lived, but in the experimental period of 36 weeks gained 40 lb. per head less than the similarly fed uninfested sheep. It was noted that the infested sheep ate less during the period of patency than the uninfested ones. Recent work has shown that this depression of appetite is one of the chief means by which *Trichostrongylus axei*—and presumably other similar worms—exerts its ill effects. Three groups of sheep were compared, one infested and two worm-free. The food consumed by the infested group was weighed and the same amount given to one of the worm-free groups. The weight gain of this was intermediate between that of the infested group and the other worm-free group that was fed *ad libitum*. This last experiment suggests that there is some pathogenic effect (possibly decreased utilisation of food) in addition to depressed appetite.

Resistance to Strongylus Infections

Efforts are being made to confirm and extend Australian work on resistance to *Strongylus* infections by a study of *Trichostrongylus retortaeformis* in the rabbit. The host response in both initial and secondary infections varies considerably with the numbers given. Two resistance mechanisms have been demonstrated. In the first, termed "self cure," all mature worms are expelled; it depends on the ingestion of a sufficient number of worms in one or more "doses." In the second mechanism the ingested larvae are inhibited and may remain as third stage larvae for several months. They generally resume their development in batches, each batch as it reaches maturity

evoking the "self cure" mechanism with consequent expulsion. In rare cases the inhibited larvae appear to resume development all at one time with correspondingly serious effects or death as a result.

Other experiments suggest that when worms are being taken in continuously a static worm population is maintained though it does not consist of the same individuals but of new batches which are in turn expelled.

Fascioliasis

New methods have been worked out of counting the snail population of samples of turf and the level of fluke infestation. It seems that *L. truncatula* is mainly an annual, the overwintering snails beginning to lay eggs about April. Competition may become intense and many snails die before any possible infection reaches the cercarial stage. Therefore, many snails do not necessarily mean many flukes and there may well be an optimum density for maximum production of cercariae.

Entomology

Dips.—The biological testing of sheep dips containing the newer insecticides DDT and BHC, which occupied much of the time of the entomology section from 1949 to 1951, has now largely given way to chemical methods, though the existence of different isomers and preparations of BHC causes difficulties. No case of sheep scab has been found since the single isolated case confirmed in February, 1952.

Sheep Blowfly.—All seven British species of *Lucilia* have now been reared and artificial strikes have been produced with five species and with *Phormia terranovae.* Apparatus has been set up and calibrated for use in producing, artificially, climates in which the flies may be induced to oviposit on sheep so that the value of various treatments in protecting sheep may be assessed. Using artificially produced strikes, a start has also been made on the testing of "maggot dressings."

Work at our field entomological laboratory includes studies on rearing methods for blowflies and factors affecting subsequent behaviour in cages, factors influencing the winter diapause, a myiasis survey, and population studies on numbers and structure using baited and unbaited cages.

Warbles.—An attempt is being made in the Isle of Wight in co-operation with Field Officers to demonstrate that, if the statutory dressings are carried out regularly and properly, an area of some size can quickly be freed from warbly fly. Farm visits are being made and group meetings held, but no assistance is provided in the form of money or personnel.

Fluorosis

Not a great deal has been added to our knowledge of fluorosis in the last year or two but the problem deserves mention because further instances of serious individual loss have been established and data are accumulating to show that the damage may be wider than at one time was believed.

It has also been recognised that soil and pasture analyses are of very limited value for survey purposes and that the best index of a locally serious problem is a combination of clinical examination and urine analysis, together with bone examinations of any animals which come to *post-mortem* examination.

Swine Fever

The value of crystal violet vaccine is now well established and our main difficulty now is equating supply and demand. The latter has now run steadily at about 3 litres a day (600 to 300 doses according to size of pig) for the past year, but at the time of writing it has increased more than 10 times in one month so that stocks of over 1,100 litres which were expected to cover a year and have been straining our cold stores look like being depleted within two months—and it takes three months to produce more vaccine. We have turned everything on and will, I trust, meet the unprecedented though welcome demand. It is most unfortunate, however, that vaccination should have been left until the disease has become widespread, with the consequent loss and the risk also that pigs which are already incubating the disease will be presented for vaccination.

Intradermal vaccination in the tip of the ear appears to confer a stronger immunity with a smaller dose than that used subcutaneously. Further work is under way. The method would be a little more difficult but would economise in vaccine costs.

During the past year, work has also been done on the adaptation of the S.F. virus to rabbits and goats with the object of producing a vaccine which will confer a more durable immunity than crystal violet and which may also be cheaper to produce. A lapinised vaccine has already been produced in the U.S.A. and we have tested this, finding that in pigs in first-class health it produces no more than a mild reaction and is followed by a solid immunity. The duration of this is not yet known, but would be expected to be long. In "not so good" pigs, however, *i.e.*, pigs which are not ill and would not otherwise die but which are stunted or have an occasional cough or are below par in some way, reactions have sometimes been severe and losses high.

Attempts are also being made to see whether the diagnosis of swine fever can be hastened or improved by histological examination of the brain for characteristic changes; and in association with this a study is being made of other forms of encephalitis which might cause difficulty in differential diagnosis.

Swine Erysipelas

Estimates of the value of S.E. vaccination have in the past been based on field results because of the extreme difficulty of infecting pigs experimentally. Claims had been made for a scarification test dependent on the degree of local reaction produced, but in our hands it proved of little value. Some years ago, however, we were able to show that pigs which were immunised with crystal violet vaccine against swine fever and which had survived challenge with virulent virus could be infected with *E. rhusiopathiae* intracerebrally and a large proportion died of acute swine erysipelas. Further work showed that similar results were obtained if the *E. rhusiopathiae* was injected intramuscularly. A satisfactory method of testing S.E. vaccines in pigs was therefore available for the first time and the method has since been used at Weybridge to show the satisfactory immunising value of a living avirulent vaccine and elsewhere to show the satisfactory immunity conferred by a formalinised vaccine adsorbed on aluminium hydroxide.

Interesting results were also obtained last year in an examination by cultural and biological methods of fresh and salted long bones from a bacon factory. By the method finally adopted 25 per cent. of the salted bones and 47 per cent. of the fresh ones were shown to be infected.

Newcastle Disease

Newcastle disease remains an important problem. You will know the seriousness of the position which arose from the numerous outbreaks of the acute form which occurred in 1947 following the importation of poultry from the continent of Europe for the Christmas trade. It necessitated increased studies in two directions: firstly, with regard to the sources of infection, and secondly—in case our efforts at control by slaughter should fail—further work on vaccination. Investigations on samples of imported carcases, even when these were confined to eviscerated carcases, showed that a high proportion carried infection, but by control of sources of import, direction to certain areas and maintenance of our traditional methods of control, the acute disease was brought under control. The subacute form gradually increased, however, and is still a source of concern especially as in many cases the origin of infection cannot be traced. A survey has therefore been arranged in which blood tests will be made of random samples of birds in order to see whether hidden sources of infection unmarked by obvious symptoms can be uncovered.

You will know, I think, that some years ago we showed that it was possible to prepare a crystal violet vaccine for Newcastle disease and that this vaccine, which was safe in use and kept well and caused no interference with the H.I. diagnostic test, conferred protection for at least a year. It is, however, relatively costly to prepare and attention was therefore turned to the practicability of using a living vaccine made from a strain isolated earlier from a mild outbreak.

The main object of the experiments was to determine the degree of safety with which the vaccine could be used and the duration of the protection conferred. The vaccine was administered by nasal instillation. Chicks vaccinated at two to three days of age showed mild respiratory symptoms from the 5th to the 11th day, but losses were low and no more than in unvaccinated controls. Of 100 chicks challenged with a virulent strain at 23 to 46 days only one showed symptoms. Of groups of six tested at monthly intervals thereafter up to 14 months, only one showed symptoms. In laying birds, a mild reaction was produced in a proportion of the birds but there was no mortality attributable to vaccination and with the exception of one flock where intercurrent respiratory disease was present, no decline in egg production attributable to vaccination. Groups of 12 fowls were challenged at monthly intervals up to 16 months, with no symptoms except in two birds (tested at 12 months).

Two points of considerable importance emerged, *viz.*, that if 25 per cent. or more of a folded group were vaccinated the vaccine strain gradually spread to the others and that when birds were challenged at a time when immunity was waning and the H.I. titre low, the virulent challenge virus was excreted in many cases, and the bird therefore likely to infect other birds, although it showed no symptoms itself. It is clear from these facts that, although the vaccine confers a durable immunity, it would gradually spread and interfere generally with the use of the H.I. test and would in other ways also be likely to mask the spread of virulent infection.

More recent work has shown us also that the method of administration is important because the wing web stab method, though safe, gives erratic results, whilst exposure of birds to an infected mist for two hours may be followed by high mortality presumably because a considerable dose of virus reaches the air sacs themselves. Tests of the B1 strain much used in the U.S.A. for intranasal administration showed that it was of much lower immunising value than the Weybridge F1 strain.

A new capillary method has been developed for carrying out the H.I. test. It is a valuable qualitative test for which very little blood is needed and which can be carried out in the field with formalised virus antigen. Unfortunately, this antigen is rather unstable and the test has certain other disadvantages but it provides a useful and more economical method of making H.I. tests. Experience with the use of extracts of egg yolk instead of blood has shown that this may also be a useful survey test.

A further point of interest is the discovery of Newcastle disease last year in imported cage birds. Psittacosis was discovered at about the same time and imports of "parrots and similar birds" have now been prohibited. (Parrots and Miscellaneous Birds (Prohibition of Importation) Order of 1953.)

B.W.D.

Work has included investigation of unexpected breakdowns and search especially for variants undiscovered by the routine test. Only three variants have been found in nearly 500 strains examined and it is clear that variants are not a problem in Great Britain as they are elsewhere.

It has been suggested in the past by American workers that the rapid whole blood test was unsatisfactory for turkeys, but a comparison recently made with the tube test has shown it to give results similar to those of the tube test.

Fowl Typhoid

Fowl typhoid has long been endemic in certain areas but has assumed greater importance in recent years, *e.g.*, in parts of Wales and more recently in Yorkshire. It reaches a peak in late summer and occurs commonly in the adult and young adult but may occur in quite young chicks. Studies are under way to get more information on its epidemiology and laboratory and field trials of new vaccines are in progress.

Riboflavin Deficiency

This appears to have been the cause of death in the 45/55 groups of eggs with chicks dead-in-shell from 39 flocks.

Coccidiosis

Reports have already been made by ourselves and by others showing that sulphamezathine and certain other sulphonamides, whilst effective if used at the right dose, may if used in too high a dose inhibit even the early developmental stage of the parasites, and that delayed bleeding and death may occur after ceasing dosing. With proper dosage, however, a sufficient number of second generation schizonts proceed to maturity and an immunity develops which prevents delayed symptoms. Delay of dosage until the 72nd hour after experimental infection has the same effect.

Sulphaquinoxaline has come into use in recent years but field experience has shown that under certain circumstances considerable mortality may occur, associated with extensive haemorrhages and necrotic lesions. These lesions have in some cases been reproduced experimentally but mortality has usually been low, and in other experiments the usual dose had no harmful effects whilst two to four times the usual dose produced inappetence

and slowed growth but caused no mortality. It seems clear, therefore, that factors other than too high or continued dosage are concerned.

Other Poultry Studies

These have included the parasite content of deep litter kept under various conditions and the production and treatment of histomoniasis in turkeys (blackhead), whilst other work at Lasswade has also included investigation of a serious outbreak of *Hexamita meleagridis* infestation in turkeys, and studies on round heart disease and lymphomatosis and the effect of penicillin addition to mash under various environmental conditions.

The Newer Rodenticides

The toxicity of ANTU and Warfarin has been studied in pigs and poultry. The latter are relatively resistant; doses of ANTU as high as 4 g. per kg. bodyweight have been found to cause symptoms but no deaths, whilst similar doses of Warfarin did not affect blood clotting time or produce other symptoms.

In pigs, the minimum toxic dose of ANTU was 40 mg. per kg. bodyweight. Deaths usually occurred 24 to 48 hours after dosing and *post-mortem* findings were characterised by hydrothorax with fibrinous straw-coloured fluid in the chest cavity and marked interstitial oedema. Repeated consumption of doses of 25 mg. per kg. produced neither symptoms nor lesions. Chemical tests are not reliable and positive results are obtained only if death occurs within 24 hours of dosing.

With Warfarin, single doses up to 3 mg. per kg. failed to produce any effects but doses of 0·4 mg. per kg. given daily for seven days produced symptoms and in some cases death. Symptoms and lesions are variable. They are dependent on accidental damage to blood vessels with resultant haemorrhage and haematomas which occur because of the lengthening of blood clotting time.

Summary

Recent work at Weybridge is described with particular reference to matters which have a direct bearing on current practice, *viz.* :—

Johne's disease: results obtained with a vaccine and with a complement fixation test.

Vibriosis: final results of transmission experiments.

Brucellosis: S19 vaccine, the Milk Ring Test, and other milk tests.

Bovine mastitis: transmission experiments, results of Surrey Scheme for eradication of *Str. agalactiae*, control and treatment.

Tuberculosis: unusual sites of primary infection, tuberculoid mastitis, research on tuberculin.

Q fever: latest results of a survey.

Hypomagnesaemia: value of daily oral supplement of magnesium, absence of effect on butter-fat production.

Hypocuprosis: distribution and control.

Parasitic bronchitis: symptoms caused by worms when only a few mm. long, relation to fog fever, the "silent carrier," survival and migration of larvae, resistance phenomena.

Parasitic gastritis: influence of nutritional plane, ill effects largely through depression of appetite.

Specific resistance to strongylosis: self-cure, inhibition in the third larval stage and subsequent development.

Fascioliasis: epidemiological studies.

Entomology: dips, rearing of sheep blowflies, accommodation for producing artificial climates for study of factors affecting strikes and of protective treatments, a myiasis survey, and population studies using baited and unbaited traps.

Warbles: an attempt to eradicate the warble fly from the Isle of Wight.

Swine fever: crystal violet vaccine supply and demand, intradermal vaccination, vaccines from strains adapted to rabbits, attempts to improve diagnosis.

Swine erysipelas: a method for testing vaccines in pigs, frequency of latent infection.

Newcastle disease: external and internal sources of infection, a vaccine prepared with a natural mild strain, a new capillary method for haemagglutination-inhibition tests, import of Newcastle disease and psittacosis (Ornithosis) in cage birds.

B.W.D. fowl typhoid and dead-in-shell chicks due to riboflavin deficiency.

Coccidiosis: delayed symptoms after over-dosage with sulphonamides, toxic effects of sulphaquinoxaline.

Blackhead: *Hexamita* as a cause of serious loss in turkeys; round heart disease and lymphomatosis.

The newer rodenticides: ANTU and Warfarin, relative resistance of poultry to both, toxic doses for pigs—symptoms and lesions.

Discussion

The Chairman: For the opener we have Mr. Hughes who, before he left Compton for the commercial field, carried out some outstanding work in connection with mastitis. Fortunately, his transition to the world of business did not mean an end of his research and I have no doubt he will tell us something about that this afternoon.

Mr. D. L. Hughes, F.R.C.V.S., Dip. Bact. (Thurgarton), then read his contribution, which was as follows:—

I knew when Dr. A. W. Stableforth agreed to give a paper on "Recent Advances at Weybridge" that we should be given a contribution of considerable variety and also that it would be intensely interesting, but I do not think any of us were prepared for a picture painted on such a broad canvas. The British taxpayer should be grateful that his expenditure at Weybridge is so wisely used, and even the British farmer, an individual neither easily impressed nor given to superficial gratitude, should feel that his animal health problems are being taken very seriously. He is certainly getting value for his money.

You will, I hope, sympathise with me in the very formidable task which is mine in opening the discussion on a paper of this range and quality. Quite obviously my approach can only be superficial and will consist of isolated comments, questions, opinions and a few facts obtained in our work at Thurgarton, and I will not attempt the impossible task of commenting on every disease mentioned in the paper.

Johne's Disease.—I think most of us will agree that infection with Johne's bacilli is a risk of the young animal, and that a considerable proportion never become clinical cases. Wilson Taylor's (1952) survey in which he recovered Johne's bacilli from 15 per cent. of 665 apparently normal beasts indicates the possible extent of the carrier problem.

Dr. Stableforth refers to recent experiments indicating that adult bovines may be infected by large doses of infection at five or six years of age. I presume these experiments are those described by Doyle (1953) using imported Irish cattle which were tuberculin test negative. Were they also negative to the complement fixation test outlined by Hole (1952)? Despite this evidence I suppose Dr. Stableforth still feels that it is primarily the young bovine that needs protection in one form or another.

The scope of the experiments to test the value of living *M. johnei* vaccine is impressive. One realises the difficulties of arranging experiments of this magnitude, but one wonders if

relying on the older animals in the herds as the source of infection to test the efficacy of the vaccine is quite sound. Obviously with each succeeding year the proportion of vaccinated animals in the herds increases and the numbers of older infected animals become less, so that the degree of risk is also less each year. Can this be allowed for in the interpretation of the results? Alternatively, are there any herds in which half the young stock are unvaccinated and half vaccinated, leaving the older animals as the initial source of infection and relying on the unvaccinated for its perpetuation?

May we be told what type of modifications are used in the vaccine now under test which does not give rise to a vaccinal nodule and only a slight tuberculin reaction.

Hole's (1952) preliminary statement on the use of a complement fixation test in detecting suspected cases which are faecal smear negative was extremely interesting and if it is confirmed should prove to be of great value in control and as a research tool.

However, I think I should point out that the interest and curiosity aroused, both among veterinary surgeons in practice and research workers in this country, is largely unsatisfied. The existence of the test is widely known among pedigree breeders and I understand a negative test is required by certain countries as a condition of import. In the absence of detailed facts on the test the profession is in an ambiguous position, and I do not think the Ministry should leave us in it for long. May we assume that more details, including a technical description of the test, will be published in the near future in the British literature.

Although I do not suggest that treatment should be part of long-term control measures, there would be a place for treatment which would arrest the clinical attack and allow salvage of the affected animal. To this end my colleague Ford (1952) has described therapeutic tests of streptomycin and TBI on clinical cases. He has also tried iso-nicotinic acid hydrozide, all, I am afraid, without effect.

Mastitis.—It is now justifiable to say that contagious mastitis caused by *Str. agalactiae* is a problem which can be controlled. Our knowledge of its distribution in and on the cow, and the means by which it spreads from cow to cow, makes it possible to devise milking methods which will limit the spread of this organism in self-contained herds. I think it is also true to say that penicillin is an outstandingly efficient treatment for *Str. agalactiae* infections.

If we accept these arguments to what extent are we reducing the *Str. agalactiae problem*? The results of the Weybridge eradication scheme in Surrey are impressive and on a large scale. The results are presumably achieved by various forms of "blitz" treatment with penicillin. However, I feel there are dangers in assuming that conditions in Surrey are necessarily true on a national scale. In fact we have reason to think otherwise. Since 1949 we have been conducting a survey at Thurgarton of the bacteriological results of examining milk prior to treatment of *all cases* of mastitis seen by four veterinary surgeons in a busy practice in the North-East Midlands. (I must acknowledge our debt to Mr. E. Wilkinson, M.R.C.V.S., of Derby, and his assistants for the great help they have given in this connection.) By including all cases seen we hope to assess the relative importance of the various organisms and in particular whether *Str. agalactiae* is declining in importance. Our figures for the years 1949 to 1952, which are based on a total of 2,376 cases, are as in Table at foot of page.

There seems to be some evidence of a gradual decline in the incidence of *Str. agalactiae* over the four years, but it is not spectacular and it continues to be the biggest single cause of mastitis. I think these figures are a reflection of the type of dairy farming practised in our area; many of the herds are not well managed, and an appreciable number are "flying herds." In such areas, and unfortunately there are many similar in this country, our progress is bound to be slow. As an extension to this work my assistant Miss Aynsley (1953) has undertaken a series of tests on the sensitivity to penicillin of cultures of mastitis organisms obtained from this survey. Five hundred cultures were tested, of 126 strains of *Str. agalactiae* none was found to be resistant, and out of 116 strains of *Staph. pyogenes* 11 were resistant to 2 units per ml. of penicillin. On further testing these staphylococci were inhibited by the fairly low dilution of 2·5 units per ml. of penicillin, so there does not appear to be any real reason to think that penicillin resistance as such is complicating the mastitis treatment problem.

The figures obtained from over 2,000 cases by Weybridge in 1952 are not comparable with ours as they were not based on every case seen by the veterinary surgeons; they included post-treatment samples and I gather some of the herds had been subjected to "blitz" penicillin therapy.

Nevertheless, whatever the prevalence of *Str. agalactiae* may be in a particular area, practising veterinary surgeons are all concerned with how to deal with the other bacteria causing mastitis; pathogenic staphylococci and *Str. uberis* can be especially troublesome. There are suggestions that the newer antibiotics, as indicated by Dr. Stableforth with aureomycin, may prove helpful in treating these organisms. We can safely assume that interested research organisations are keeping a close watch on possible therapeutic developments. We are interested in neomycin, an antibiotic with interesting possibilities. The problem of treating *C. pyogenes* mastitis is not so much the search for yet another antibiotic, but devising means of presenting existing antibiotics in some form which will be effective in the "summer mastitis" complex. However, we must accept that the control of some of these other organisms will prove more difficult than that of *Str. agalactiae* owing to their different and more widespread distribution in the dairy cow and her environment.

A Bacteriological Survey of Clinical Mastitis

1949–1952

	Str. agalactiae	*Str. dysgal-actiae*	*Str. uberis*	*Staph. pyogenes*	*C. pyogenes*	Other organisms	"Negatives"	Contaminated samples	Total cases
1949	180	65	116	68	47	79	49	21	625
%	28·8	10·4	18·56	10·88	7·52	12·64	7·84	3·36	
1950	207	62	106	76	32	108	42	21	654
%	31·64	9·47	16·21	11·63	4·91	16·51	6·42	3·21	
1951	126	65	115	81	54	72	26	39	578
%	21·82	11·84	19·87	14·01	9·34	12·45	4·52	6·75	
1952	113	82	91	61	61	54	19	38	519
%	21·77	15·80	17·54	11·75	11·75	10·40	3·66	7·32	
Totals	626	274	428	286	194	313	136	119	2,376
%	26·35	11·52	18·00	12·03	8·16	13·22	5·72	5·00	

Tuberculosis.—I think we shall find as the number of attested herds increases, we shall have to pay more attention to human-bovine contacts, bearing in mind the infected human as a source of breakdown in herds, and we must also recognise that an infected cowman may occasionally be excreting the bovine strain of tubercle bacillus. Christiansen (1953) has provided clear evidence of this risk in recent figures from Denmark. It is salutary to be reminded that primary infections may result from veterinary interference for some other purpose, and constant care in technique can be the only real protection against such breakdowns.

Q Fever.—This, to us, new infection of the bovine may not be of much intrinsic veterinary importance, but we have a duty to be aware of it and to remember its importance as a source of infection to man. The consumption of infected milk appears to be an obvious risk, although cases in man do occur by direct contact with infected animals, slaughterhouse material, and inhalation of infected dust. Is the bovine the only animal host in this country?

Hypomagnesaemia in Bovines.—The importance of this condition needs no emphasising and in certain areas the disease becomes a really alarming problem in bad years. Some miles south of here it was so this year in some of the best beef herds in the country. I think most people with knowledge of the condition are agreed that it is not a deficiency disease in the true sense of the word. The magnesium is in the body but it is not in the blood in the right amount under certain "trigger" conditions. The problem resolves itself into what are the trigger conditions. The association of hypomagnesaemia with grazing cocksfoot and clover leys after heavy ammonium sulphate dressing is extremely interesting. The apparent effect of the high nitrogen may be merely rapid herbage growth, and it is possible that growing herbage may contain a factor, of, shall we say, "a hormonal nature," which affects the serum Mg via the endocrine system.

Alternatively, some metabolite of rapidly growing herbage may be capable of forming a non-ionisable complex with Mg which is rapidly excreted. This would explain the need for continuous flushing with Mg which Allcroft (1953) has shown to be necessary if serum levels are to be maintained.

However, there is probably more than one trigger mechanism. Those cases which occur at the back end and in winter under bad climatic conditions are probably set in train by different factors from those causing hypomagnesaemia in the spring on rapidly growing herbage, although the resulting dysfunction is the same. Research on the problem would progress more rapidly if we knew more about the normal rate of excretion of Mg and if we knew how to produce cases of hypomagnesaemia at will. Perhaps Weybridge and the N.I.R.D. are half way to solving the latter requirement.

Hypocuprosis.—I do not propose to comment on this condition, for although we do not know the conditioning factors at least we can prevent its occurrence.

Parasitic Bronchitis.—The more recent information which tells us that severe symptoms can occur from invasion by infective larvae not likely to be detected in an ordinary *post-mortem* examination will help to explain some of the outbreaks which are met with in the field. Attacks involving the whole of the adult herd and the young stock can be difficult problems for the practitioner. The conception of the "silent carrier" may also explain much that is puzzling. However, techniques for detecting such animals would be useful, for faecal examinations are seldom of value. Has any consideration been given to allergic tests using extracts of worms? Needless to say we are still without a sound scientific treatment for affected animals. Is there any glimmer of light on this front?

If lungworm larvae have very limited powers of migration how are massive infections acquired, as presumably cattle and sheep do not eat faeces?

Parasitic Gastritis.—Weybridge has provided further evidence of the drain on production of sub-clinical parasitic gastritis. Leiper (1951) at Thurgarton has provided similar evidence on different lines. The correct use of phenothiazine in ewes prior to lambing will control the so-called "spring rise" of worm egg output. This can result in the lambs of such ewes showing an average of 7 lb. weight increase over lambs from ewes not so treated. The sheep farmers of this country are unaware of the extent of their losses from sub-clinical parasitic gastritis, and I would hazard the guess that these losses are probably far greater nationally than those resulting from frank infestation.

Stewart (1953) has recently shown that the "self cure" mechanism is accompanied by a rise in blood histamine level, and the administration of an antihistamine drug prevented the fall in egg count characteristic of "self cure." "Self cure" was also associated with a strong local reaction to intradermal injection of *H. contortus* antigen. There was local oedematous change in the mucosa of abomasum or small intestine depending on the site of attachment of the adult worms at the same time as blood histamine was increased. This is strong evidence that the "self cure" mechanism is of an allergic nature.

Fascioliasis.—The dynamics of snail populations may throw some light on the variations in severity of attacks from year to year in cattle and sheep. However, would Dr. Stableforth agree that treatment of all animals in areas where the disease occurs remains the most useful method of control, especially when it is remembered that flukes can live for at least six years in untreated hosts?

Warbles.—The attempt to achieve eradication in a limited geographical area such as the Isle of Wight will be watched with interest. Presumably steps are being taken to stop its re-introduction in imported cattle. Despite intensive propaganda and legal powers the general progress achieved in the country as a whole is very disappointing, and in my opinion no real progress will be achieved until there is some financial inducement to farmers to produce clean hides or alternatively a financial penalty attached to the warbled hide.

Swine Fever.—It is well that the difficulties in providing an even supply of vaccine, especially when demands from the field are so uneven, should be emphasised. Presumably a wide extension of the use of crystal violet swine fever vaccine through the recently agreed scheme between the B.V.A. and N.F.U. should, to some extent, even out its use.

Any modification of the application of the vaccine or its make-up will be welcomed if its efficacy and administration are improved, although C.V. vaccine in itself is a great advance.

A lapinised or caprinised vaccine, apart from economy in production, also would have the attraction that the risk of contamination with other infections of the pig would be avoided.

Everyone will be pleased to hear that investigations continue into laboratory methods of confirming swine fever infection. None of us can feel that the present system of confirming outbreaks is satisfactory.

Swine Erysipelas.—The ability to set up swine erysipelas experimentally in pigs after C.V. vaccination and S.F. virus challenge is a very considerable technical step forward. From now on vaccines and sera can be subjected to critical potency tests, which were previously impossible. Experiences from the field on the value of the new formalinised vaccine adsorbed on aluminium hydroxide would be interesting.

Boots Research Department have been interested in human rheumatoid arthritis and its treatment with various adrenecorticoid hormones. In this connection there was a need for studies on an experimental arthritis resembling the rheumatoid arthritis of man. With this in view I investigated the effects of repeated intravenous injections of swine erysipelas bacilli in healthy pigs. I was able to reproduce an experimental arthritis originally described by Collins & Goldie (1940). The arthritis produced in this way is a chronic proliferative arthritis resembling, both grossly and histologically, rheumatoid arthritis in man. Sixteen pigs in two experiments were injected, all of which after varying periods of time exhibited this arthritis, although none of them at any time presented symptoms of acute swine erysipelas. All pigs were eventually slaughtered and *Ery. rhusiopathiae* was recovered from the affected joints of 14 out of the 16 pigs, in some cases two years after experimental infection (*slides shown*). These results fit in with Weybridge's demonstration of infection of bones from bacon factories. In our experience many joints from bacon carcases show arthritic changes similar to those I have

produced experimentally. Not all such joints are infected although their appearance suggests that they are the result of S.E. infection. From a practical point of view the so-called rheumaticky pig should be regarded with suspicion and considered as a carrier of S.E. infection. Incidentally our attempts to sterilise the infected joints with penicillin and S.E. antiserum or chloramphenicol were not successful, neither did the use of cortisone improve the condition of the joints.

Newcastle Disease.—The work on vaccination clearly indicates problems not appreciated by the layman. A live vaccine may be an effective prophylactic and yet be dangerous in use owing to its masking of virulent infection, apart from complicating diagnostic tests. With diseases such as Newcastle and foot-and-mouth, which arouse political agitation, facts such as these need stressing, for the interested public are easily led into prematurely demanding a vaccination policy.

It is difficult to avoid speculating on how many infections, particularly in poultry, have been introduced into this country in the last few years by the Ministry of Food not following the advice of the veterinary profession. Further reflection raises the question why the Ministry of Health raised the ban on the importation of parrots in January, 1952, only to have to reimpose it this year after a number of human cases of psittacosis including one death had occurred following contact with imported parrots.

To say that the disease is enzootic in pigeons in this country is no answer, for all the evidence points to the pigeon infection, now called ornithosis, being much less dangerous to man than the type brought in by imported parrots.

B.W.D. and Salmonellosis.—I would like to ask Dr. Stableforth whether the present methods of disinfection of eggs prior to hatching, and the disinfection of incubators, which are mainly based on the formaldehyde gas process, are considered to be adequate and, if not, whether any work on improved disinfection procedures is being undertaken.

Riboflavin Deficiency.—This deficiency seems to be fairly common; can we be told what particular diets for laying hens result in these high figures of chicks dead in shell?

Coccidiosis.—It is disappointing that coccidiostatic drugs of such outstanding value as sulphamethazine and sulphaquinoxaline should give rise to occasional breakdowns and toxicity in the case of the latter. However, no drugs are perfect, although it is surprising how many believe a wonder drug for every infection must be possible. We should not forget that these coccidiostatic sulphonamides are not merely coccidiostatics, but also have a considerable effect on the intestinal bacterial flora. It may be that the haemorrhagic lesions seen in sulphaquinoxaline poisoning are due to an induced vitamin K deficiency, resulting from suppression of intestinal bacteria capable of synthesising vitamin K. Is there any evidence that this view might be correct?

Histomoniasis (Blackhead) in Turkeys.—We have been interested in this disease for a number of years, particularly its chemotherapy. To this end considerable effort has been put into reproducing the disease artificially. The artificial infection resulting from the rectal injection of diseased caeca has been studied in some detail in our laboratories (Farmer & Stephenson, 1949; Farmer, Hughes & Whiting, 1951). The infection was reproducible in a high proportion of poults, most of which died, by the 12th day. This is satisfactory for drug testing, but the disease is probably too acute and does not always mirror the activity of drugs in the field. The disease set up by dosing with the embryonated eggs of the caecal worm, *Heterakis gallinae*, the intermediate host, is more akin to the natural disease but in our hands is very irregular in its incidence. What methods are used in Weybridge to set up infection?

Rodenticides.—Consideration of the newer rodenticides forces one to reflect on the increasing use of various chemicals on the farm for many purposes. Some of these are toxic or potentially toxic to farm livestock, while others are not found toxic under experimental conditions. It is clear that the practising veterinary surgeon needs much more knowledge of symptoms, *post-mortem* lesions and if possible field diagnostic tests for many of these chemicals. The responsibility for providing such knowledge rests with official laboratories and the research laboratories of the chemical industry. McGirr (1953) has reviewed some of those hazards based on work done at Weybridge. However, one must say that in some instances veterinary surgeons ascribe death in farm stock to poisoning with this, that or other compounds on very slender evidence indeed.

When I commenced this contribution I apologised for what could only be a superficial approach to a very extensive paper. In concluding I realise I must renew those apologies. I can only hope that my remarks will encourage others to discuss this very interesting paper by Dr. Stableforth. There can hardly be anyone in the audience who will not be involved with one or other of the many problems he has mentioned. (Applause.)

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General Discussion

The first contribution to the general discussion was Mr. A. Pottie (Paisley), who after thanking Dr. Stableforth for his interesting paper—one subject of which would have made a paper for discussion—said that he was interested in the fixation test for Johne's disease. As, however, it was too soon to speak on that subject without more experience, he would turn to hypomagnesaemia.

He did not wish to appear awkward and hoped this was constructional criticism. From his experience he was inclined to think that the disease we called staggers and which lately had been called hypomagnesaemia was not entirely a magnesium deficiency.

In April, 1951, four cows suckling calves out of 17 in one field of second year grass died within 14 days. The remaining 13 were given one injection subcutaneously of 1 oz. magnesium sulphate and no more deaths occurred in that field. So far so good, one would say. On May 16th, 1951, he commenced taking 12 blood samples at random from the 40 cows on the same farm. This was repeated on June 8th, 1951, February 11th, 1952, April 24th, 1952, and May 7th, 1953. In the interval, a mineral feed mixture plus magnesium was fed from January to March in 1952 and 1953. Dr. Stewart, of Moredun, did the analysis of the blood and in each report remarked on the low magnesium and said he wondered why the animals were not ill. Some were 0·86, 0·66, 0·45, 0·94 and 0·68 mg. per 100 c.c. serum magnesium levels and yet to all outward appearance the cows seemed healthy and normal. Something other than low magnesium was the cause of staggers.

Also we did not get spectacular results—as in milk fever with calcium—when magnesium was injected into an animal with so-called hypomagnesaemia.

He thought we should look farther than magnesium deficiency for the cause of staggers and sub-divide the symptoms shown; at the same time the nomenclature of the profession should be revised. He felt they might be barking up the wrong tree.

Mr. H. M. Wilson (Cupar): As a profession they must all be happier in the knowledge that they now had at hand a method of controlling Johne's disease as a herd problem, which it had without doubt become in recent years. Dr. Stableforth stated that the blood test was about 90 per cent. correct. Would he agree that it was now zero hour and that practising veterinary surgeons should encourage owners to permit them to adopt this method of control, or at this stage should a cautious policy still run?

With regard to brucellosis, Dr. Stableforth acknowledged that there were " breakdowns " in vaccinated herds. Would he agree that as a general measure cattle should be inoculated between the ages of four and eight months, again before first service or after first calving, and a third time? If so, when did he suggest the third time should be? What was the length of time of immunity following vaccination as done at present?

Major W. Jarrett (Glasgow): He would like to make some observations on Dr. Stableforth's section on parasitic bronchitis.

He later had mentioned that the Weybridge workers had found that the larvae of *D. viviparus* cannot survive for longer than three months on pasture. This was an extremely important fact, since upon it must depend any system of control of parasitic bronchitis. If this were the case then all that would be required to eliminate parasitic bronchitis from a farm would be to graze the calves over grass which had not been grazed that season by adult animals. Unfortunately, this was not the case. They (Urquhart, McIntyre & Jarrett) had carried out experiments at Glasgow which showed conclusively that larvae could survive for longer than three months on pasture.

In these experiments several calves which were naturally infected with husk were turned out on to plots of grass for a few days. This took place in early November, and no animals were allowed on to this grass until June, when a few young calves which had never before been at grass were turned out on to this plot.

After three weeks the calves were killed, and at autopsy half of them were found to be infected with lungworms.

In a later experiment, three calves were turned out on to a pasture which had been infected 13 months previously; all of the calves became affected with parasitic bronchitis.

This showed quite conclusively that under natural conditions larvae could survive on pasture for at least 13 months.

In another experiment five heifers, all natural cases of husk, were left outside until February when they were housed. Three months later two of these five beasts were excreting 25 to 50 larvae per gramme in their faeces.

These two experiments illustrated two very important points in the control of husk. These were: Under natural conditions larvae could survive the winter on pasture; this meant that only re-seeded pasture was safe for calves. Secondly, it was unsafe to graze young calves with animals which were infected the previous year.

This year they had examined over 200 lungs from bovines suffering from husk. In none of these cases could death be ascribed solely to worms a few mm. long. While it was possible that such a phenomenon occurred, they felt that it was not of clinical importance in the field.

They also felt that most, if not all, of the cases which showed few or no lungworms at autopsy could be ascribed to cuffing pneumonia. In their series of 200 autopsies they found only a few cases which did not show cuffing pneumonia. They knew that that condition could be fatal by itself and that in association with lungworms it assumed a particularly virulent form and was often the lethal factor in an outbreak of husk.

This association between the two conditions was so constant in the field that husk could not be discussed without taking them both into account.

Would Dr. Stableforth give them more information on the relationship between the two conditions in the Weybridge series, both experimentally and in the field?

Finally, might he make a plea for the reconsideration of the use of the term fog fever. This had come to be used synonymously with dyspnoea with or without emphysema. They had seen this syndrome associated with several different conditions, *viz.*, *Corynebacterium pyogenes* pneumonia; cuffing pneumonia; husk; experimental histamine shock and in a similar condition to the latter associated with feeding on very lush pasture.

They felt that the name should be confined to the last-named condition and used only when the other conditions mentioned had been excluded completely.

Mr. C. V. Davus (New Zealand): Dr. Stableforth was to be congratulated upon his paper, and Mr. Hughes upon his opening. The only subject he wished to refer to was hypomagnesaemia. The paper contained a reference to cocksfoot and clover leys. In New Zealand hypomagnesaemia occurred on old pasture and new pastures which were virtually clover and ryegrass top dressed only with super phosphate and possibly lime and super phosphate, so he could not agree more with Mr. Hughes in saying that high nitrogen dressings had no bearing on the matter at all. There must be some factor, as had been pointed out, which controlled the magnesium level in the blood, just as the calcium level was maintained and lowered in "milk fever" cases which had nothing to do with calcium deficiency. It would be interesting if Dr. Stableforth would answer two points in connection with grazing on nitrogen pastures which had received the application of calcined magnesite and animals fed supplements of calcined magnesite. What was the evidence to show that calcined magnesite was effective in those cases? There was an extreme variation in hypomagnesaemic tetany with exactly the same grazing conditions and the same climatic conditions, from farm to farm and from season to season. There could be an outbreak in a large number of cows on one farm whereas on an adjacent farm, where the food conditions and the climatic conditions were the same, there would not necessarily be cases. So whilst it was stated that calcined magnesite had a certain effect, he really could not appreciate himself that there was any real evidence to prove that was so.

In New Zealand, where dolomite had been used, so far as his knowledge went, no evidence whatsoever was obtained to show that dolomite had any value as a preventative. If they agreed with Mr. Hughes's suggestions it was difficult to appreciate how any of these things had any bearing on the matter from a preventative point of view.

Mr. George Gould (Southampton): He wished to add his congratulations to those of the other speakers to Dr. Stableforth and Mr. Hughes. He owed a debt of gratitude for the work Mr. Hole had done in his practice on Johne's disease. He was very grateful for it and supported all that had been said in Mr. Hole's paper. The work done in this connection was extremely interesting and provided a pointer for the future. For him (Mr. Gould) Johne's disease was the biggest cause of requirement to slaughter or recommendation to slaughter, and he considered it the most pressing problem of the milk-producing area in which he practised.

Being very interested in the hypomagnesaemia story, he would support the opinion that calcined magnesite in adequate doses was a means of bringing to an end the spectacular losses that one could get with this condition. It must be fed over a period to maintain results and where nutrition was inadequate that must also be improved. He was not at all sure that he could subscribe so markedly to the suggestion that some factor in rapidly growing grass might be responsible, because hypomagnesaemia could be initiated by the feeding of fodder beet and when a sudden changeover was made, by the feeding of mangolds or kale or any other fodder crop of the lush type. It was essential when making these suggestions to consider all the other possible factors.

The information given in connection with *V. fetus* was very interesting. Although that disease was considered as mainly one associated with infertility one could not lose sight of the loss of calves, particularly in the pedigree herd, which arose. It should be remembered as well that there were very many more calves lost from other causes about which they knew nothing at all or very little. Could an assurance be given that some of the other 80 odd per cent. of aborted calves examined at Weybridge had been dealt with with a view to discovering other possible causes of abortion and of possible infertility which might even be masked by *V. fetus?*

In regard to swine diseases, one would like to know that some research was going on into the condition referred to as puerperal sepsis, associated some said with discharge, others said without discharge. The mammary glands became hard, piglets died, sometimes the sow died but usually became better with penicillin medication. The disease was responsible for much litter loss and it was a disease that was assuming greater and greater incidence in his practice—and in many others if information that had been given him at a late hour the previous evening was correct.

There were other conditions providing a big problem in cattle practice and on which they, unfortunately, seemed to be able to give little information and far less help—the rickettsial infections, which could produce disastrous conditions in high producing cows. This was particularly so with Ayrshires imported from Scotland—which were improved, of course, to give a higher yield (!) in the South—and then one suddenly found tick-borne fever arising with marked lowering of yield and in the later stages of lactation the cow drying up within a matter of a week. The eye infection, too, was a disastrous one unless carefully watched and treated early. Was any further information available about the treatment or prevention of these conditions?

Mr. P. S. Hastie (Ashford): Like the other speakers, he wanted to add his congratulations to Dr. Stableforth. On such an occasion any criticism that was levelled was more or less regarded as a friendly means of "getting at" the Ministry because they could not do so individually in practice. He only wished that there were income tax inspectors at the meeting as well! (Laughter.)

At a meeting of this kind they should mention how grateful those in practice were for the co-operation they received from Dr. Stableforth and other veterinary officers at Weybridge and V.I.O. centres. One never contacted them without getting courtesy and help. (Hear, hear.)

On the subject of Johne's disease, the achievements in vaccination and complement fixation testing were quite a remarkable advance in veterinary practice. If only the difficulty of the

tuberculin test interpretation could be overcome they would have gone a great way towards dealing with this disease which Mr. Gould and many other practitioners found so serious.

The identification of infected cows was of use not only for eradication directly but also, especially in heavily infected herds, in knowing which animals' calves to remove directly at birth from the dams.

On the question of *V. fetus*, he only wished that Dr. Stableforth had been able to go back to Mr. Lawson's article and tell them more about the dietetic effect on outbreaks rather than merely confirming results of infectivity experiments. To his mind the factors were connected.

With regard to swine fever, there was no doubt that on many occasions the officers of the local veterinary panel were at a loss to understand why certain cases were not diagnosed as swine fever. Would it be possible for the veterinary officers of V.I.O. centres to be used much more than they were to help in "looking" at *post-mortem* cases, as against a wait of 24 to 48 hours before Weybridge saw them? There might be a haemorrhage which the officer in the field could see, but when he telephoned to find out why the laboratory had not seen it he was told that the haemorrhage was not visible when the material arrived there. Did it disappear rapidly? Were there any details of further means of diagnosis?

Was there any information to show that inoculation against swine fever might be one of the trigger mechanisms in outbreaks of bowel oedema?

On hypomagnesaemia, while the question of heavy nitrogen application appeared to be complicated, or its application seemed to give rise to hypomagnesaemia, he felt that the trouble was not so much bound up in the addition of nitrogen itself. As their friend from New Zealand had said, pastures without nitrogen would cause it. Was the system of grazing there, where the cattle were out all the year, such that it would have the same effect as a heavy nitrogen application? The resultant lush pasture appeared to upset rumenal flora and in many cases cause diarrhoea: cold wet weather was also a contributory factor in reducing blood magnesium and these together could tip the cow into clinical disease.

Mr. Hastie wished to take this opportunity of expressing the feeling of the rest of the meeting on the work done by Mr. Jarrett, of Glasgow. He was perhaps justifiably proud of this, being a Glaswegian himself, and would like to hear more about it perhaps another year.

Dr. W. H. Bradley (Ministry of Health): Before adding further to the task of the speaker he wanted to add his own very great feeling of thanks for the paper. A point on nomenclature had been raised by Mr. Jarrett, who had seemed to challenge Dr. Stableforth to expand a little on the use of the phrase "fog fever" which appeared in the paper.

Could Dr. Stableforth help him by saying exactly what happened to that prize cow or to the cattle at the Smithfield show in early December last year, when 4,000 additional deaths occurred among humans in London and some cattle died at Smithfield? That particular incident, and the fact that in a paper such as the one now published by Dr. Stableforth there was mention of fog fever, had given him some trouble because cattle did not ordinarily live under such appalling conditions as the humans in the greater cities in this country. Yet it appeared that fog fever was a very well-known thing to most people who were responsible for looking after communities of cattle. He wanted to learn a little more about the emphysematous condition in cattle called fog fever and would be very grateful if his veterinary colleagues would help him on this.

Mr. J. R. Barker (Hereford): Both Dr. Stableforth and Mr. Hughes should be complimented on the way they had dealt with the subjects before them that afternoon. Mr. Jarrett, he considered, had confused the issue of fog fever. If people would diagnose parasitic bronchitis and various spurious conditions as fog fever then other people, including the last speaker, would become confused. Fog fever was a distinct entity with an oedema of the lung in the absence of parasitic bronchitis and all those conditions mentioned by Mr. Jarrett.

To enlighten the last speaker, fog fever had nothing to do with the London fog, the Aberdeen fog or any other such fog. The word "fog" was a play on the name of the second crop of grass known as fog and it had a peculiar nomenclature which stuck to it through literature to identify one particular condition. The fact that anybody could get confused was very interesting, but, for the benefit of the last speaker, the conditions at the London show had nothing at all to do with the fog fever which occurred seasonally from July to about the end of October, and possibly at no other time, and was generally consequent on about 10 days' grazing on the aftermath.

Mr. Barker went on to pay a special tribute to Dr. Stableforth, with whose staff he had been collaborating for the last 20 years. At the moment they seemed to be a little divergent regarding magnesium deficiency and the presence of an excessive amount of magnesium in the grass. It appeared from his own studies that insulin controlled magnesium levels and where there was a lack of response to the need for insulin, caused by the blood plasma condition, possibly a hyperglycaemia, the animal would spill over into a convulsion. It was true the convulsion never occurred unless there was a low level of magnesium. He recalled having reported on this subject in Zurich in 1938. Even in the period when the metabolic disorders occurred there was often very little fever. The length of tetany in any of these metabolic disorders was again governed by the response of the Islets of Langerhans to the call of the blood plasma. Some of them had pooh-poohed the idea of a possible hypo-parathyroidism, but it seemed quite right, and a tribute to the hypothesis of Dryerre and Russell Greig.

He had recently attended the case of a bitch in eclampsia with a perfect example of a hypo-parathyroid tetany of the hind legs which one could not compress, while the forelegs could be moved quite freely. The animal was in that condition for at least four hours, and one-fortieth grain of apomorphine was sufficient to restore it in 10 minutes. There, possibly, was the clue to the strength of hypo-parathyroidism and the lack of correction. The idea behind it was difficult to explain, but it was a phenomenon worthy of investigation by Dr. Stableforth.

The Reply

Dr. Stableforth, in reply: The questions that had been put in the discussion were certainly of a rather wide variety. Mr. Hughes, as one might have expected, had given a very erudite and stimulating opening and had set the tone of the whole discussion.

The first question was in relation to the animals which were used in Doyle's experiments in which he tried to find out whether bovines other than calves could be infected with Johne's disease. The animals had come from a farm on which there had never been any Johne's disease so far as was known and were negative to Hole's complement fixation test.

As Mr. Hughes had suggested, he (Dr. Stableforth) believed it was primarily the young bovine which was susceptible to Johne's disease, but it should be remembered that some older animals undoubtedly became infected when heavily exposed. Whether, in fact, they played a big part in practice was something that was not certainly known. It was a matter of great importance. If one knew that animals were only likely to be infected as calves then obviously one would concentrate attention on preventing infection then. Moreover, vaccination would be more practicable because one injection in calf-hood would protect them while young, *i.e.*, when most susceptible, and they would lose their tuberculin reaction before they became adult.

A question had been asked about the vaccination experiments. It had been found impossible to get farmers to co-operate in leaving half of the animals unvaccinated. It was going to be a little difficult to draw conclusions for that very reason, and that was appreciated, but there seemed to be no doubt that Johne's disease, which was originally a very serious factor clinically in all the herds concerned, had in fact practically disappeared in most cases. That was contributed to by the fact that the older animals were dying out, but there was no reason to feel that in a large number of herds with 5,000 animals the disease was going to die out unless the animals were vaccinated; one would have expected the young animals to become infected as in previous years. One could not yet feel sure about the results because only about half the animals had had two or three calves, and the incidence of Johne's disease went up from the second calf onwards. However, the results showed that the proportion of cases in the vaccinated animals was not more than one-tenth of that in the unvaccinated older animals. The final results must be awaited

Mr. Hughes had asked also about the vaccine modifications being tried out. A number had been tried. A recent one was a mixture of castor oil and camphorated oil, leaving out the pumice which had previously been an ingredient, and a reduction of the dose to 5 mg. of bacilli. The tuberculin reactions had been got rid of and the persistent lump, but the animals in this experiment were, unfortunately, not properly immune to the test dose, so it would be necessary to go back and think again. Experiments of this kind were constantly being tried.

Mr. Hughes had pointed out that there was as yet no full description of Hole's Johne's disease test in the English literature. There had been a description published in the *Proceedings of the Royal Society of Medicine* about two years previously and there

was another appearing in a French journal this year. Another paper would be coming out in the autumn which would add to the information already available. Dr. Stableforth thought he had mentioned in the paper that the test was one in which the serum to be tested was added to the antigen. The mixture was later centrifuged and the antigen was removed. If it had been sensitised it fixed complement when the latter was added and this was subsequently tested for in the usual way with a haemolytic system. That was the basis of the test.

Some very interesting results on mastitis had been given by Mr. Hughes. They had been surprising because the total number of cases he seemed to be getting was not very much smaller than that of four years ago. If the total number of cases seen in the practice concerned had decreased only by the amount stated, then penicillin in that area did not seem to have done what it had in other areas. If a comparison with the results in Surrey was justifiable, it would suggest immediately that eradication methods had been very effective in reducing the total mastitis, as one would expect, just by the cutting out of *agalactiae*. He was not sure, however, that the matter was as simple as that. Figures from other areas showed a considerable reduction of from something like 44 per cent. of the cases received back in 1944-46 down to about 9 per cent. at the present time. It looked, therefore, as if over the country as a whole, penicillin had done a good job. In Surrey, where the herds had been " blitz " treated, there had been a reduction to very small proportions.

Mr. Hughes's comments about summer mastitis had been very welcome. He also welcomed his emphasis on the fact that antibiotics were only one of the tools which helped them—they did, a lot, provided they were used properly.

There was not a great amount of further information on Q fever. An examination on between 30 and 40 goats, mostly from one herd in Devon, had been carried out. One goat was infected, and had been for 18 months, but the infection had not spread to the rest of the herd. Three hundred or 400 sheep also had been examined, mostly in Wales. Not one had proved to be infected. A small number of examinations had been carried out on pigs and rodents, and they had been non-infected, though infection in these animals did occur in other parts of the world.

On hypomagnesaemia Dr. Stableforth did not want to say a lot because the subject had been fairly freely discussed. No one knew more about it than Mr. Barker. Magnesium was only one of the factors, *e.g.*, in experiments at Weybridge on pastures which had had potash fertilisers and no nitrogen, quite low blood magnesiums had been found, which corresponded with those often found with acute tetany; but they had had no tetany at all. It did seem to be true, however, according to their experiments, that in a large proportion of cases the regular feeding of calcined magnesite, or something of that kind, did control the condition clinically, and that was an important point. In these experiments the magnesite had been fed to only half of the animals and those were the ones which had shown no clinical symptoms. Animals had been switched from one group to another and a difference in results had been clear.

Mr. Hughes had asked if Weybridge was in sight of being able to set up hypomagnesaemias for experimental purposes. It could only be said that on certain pastures it did seem to be possible to set up hypomagnesaemia. Whether it represented the type of hypomagnesaemia of other places, such as New Zealand, one could not say, but certainly one type of experimental hypomagnesaemia could be produced for use in experiments.

In answer to Mr. Dayus, Dr. Stableforth said he would have thought that possibly in New Zealand the pastures were so lush that they corresponded to those in Britain with heavy nitrogen fertilisation. The pictures one saw of New Zealand pastures made one think they were of a very lush type.

With regard to allergic tests in parasitic bronchitis, quite an amount of work had been done and there was no doubt that a skin test could be elicited and also a complement fixation test, both of which could become positive in the infested animal. Both suffered, however, from the disadvantage that, whilst a positive reaction could in some animals be obtained to either test quite quickly, in a large proportion of animals it was delayed and might not appear for a very long period. But provided one used a reasonably sensitive complement test and the right antigen one could get very definite results. Stewart of Australia had described two types of antigen. One was very specific to which many animals might not react unless they became highly sensitive. There were also antigens to which every infested animal would react but which were very non-specific.

Mr. Hughes had asked, if lungworm larvae had very limited powers of migration, how were massive infections acquired, as presumably cattle and sheep did not eat faeces? The probable answer was that cows and sheep did eat faeces. They did not do so directly, but they trod faeces over the pastures, and if they had diarrhoea it got splashed about. Harrowing also spread them, and so infestations spread quite rapidly.

Dr. Stableforth agreed that the first line of defence against fascioliasis was still anthelmintics. Unfortunately, control by copperising pastures had so far proved rather disappointing.

On dressing against warbles, efforts were being made to see what could be done by means of propaganda. There was considerable difficulty in getting farmers to do this work. They were just not interested. As had been commented, if the matter could only be brought home to them by their losing £1 on every hide, or something of that kind, action would probably be taken.

The results on swine erysipelas, referred to by Mr. Hughes, were very interesting.

With regard to possible vitamin K deficiency in sulphonamide poisoning, it had been shown that a condition of vitamin K deficiency with resultant haemorrhages could be produced by over-dosing with sulphamethazine. That result had not, however, been repeated in all experiments. Similar experiments had been carried out with sulphaquinoxaline without untoward result, but further work on this remained to be done.

Mr. Pottie had given some interesting figures and it would be agreed that they supported the view that despite very low magnesium figures there could be absence of clinical tetany. In other words, there were other factors concerned.

In answer to Mr. Wilson's question about duration of immunity in brucellosis, there had been an annotation published in *The Veterinary Record* a short while previously which really covered the question. The duration of immunity was not exactly known. There was some evidence to show that it began to wane after two or three years. One American worker of experience thought that cows became more immune with age, but that did not seem to be the experience in this country. Usually, when a herd was vaccinated properly, the infection was got rid of very largely and it would be wrong to recommend a regular procedure of revaccination after the second, third, fourth or fifth year, as a general measure. It depended largely on the history of the farm. If one was going to revaccinate there was no need to revaccinate until after the second calf.

As to the question whether practitioners should go in for eradication of Johne's disease, if any practitioner wished to co-operate with Weybridge in using the test to form two herds, by segregating the infected animals from the rest, such co-operation would be welcome. The testing of cattle in a general routine loose way did not get them anywhere. They were ready to start to see if they could make use of their knowledge for eradication purposes.

Mr. Jarrett's point about larvae lasting seven months had been noted. It was important information which would be taken back to Weybridge. There was some evidence that animals could go down with numbers of very small worms without any evidence of " cuffing pneumonia." They were, however, looking further into this question and would welcome the help of the Glasgow workers.

" Fog fever " was a very specific condition, as recognised in Herefordshire, and when it had been said that something was " like fog fever " it was meant that the histological condition or the clinical condition was like that found in " fog fever " as described in that county.

With regard to the number of foetuses lost from *V. fetus* it was thought that *V. fetus* could be picked up in foetuses fairly well now and a figure of 9, 12 or 15 per cent. was not far from the mark. Not a very large proportion of foetuses appeared to be lost except in the very early stages of pregnancy when there were early foetal deaths and it was called infertility.

As to dietetic effects on *vibrio* infection, no evidence was available to suggest that diet had any effect.

Mr. Hastie: If there was imbalance there would be more likelihood of infection and a flare up with a passing infection.

Dr. Stableforth: There did seem to be a suggestion that in some herds *V. fetus* seemed to " do its stuff " more easily than in others. That might possibly be connected with diet but there was no clear evidence.

As to whether V.I.O.s could be used for swine fever diagnosis, the work was already done by field officers. The point raised really seemed to be whether haemorrhages disappeared in the post. Small haemorrhages did become difficult to recognise, and he saw the sense in saying that local diagnosis would help more. The answer would be to give more authority to the local officer examining the material and to rely on that. (Applause.)

There was no evidence to suggest that S.F. inoculation was a trigger mechanism for bowel oedema.

A question had been put about fog fever and the point had been answered by Mr. Barker. As for the story of the cattle in

the Smithfield market fog trouble and association of that with true "fog fever," he would rather not comment. Mr. Hudson, at Weybridge, had written up a note which would be "going somewhere in due course"!

Dr. Stableforth concluded by saying that he had tried to answer the questions as well as he could in the time available and wished to thank those who had spoken for making so many useful points. (Applause.)

The Chairman: The session had been protracted so he did not propose to keep them much longer. If, after their sojourn in the particularly "heavy" atmosphere which had developed, any cases of "fog fever" occurred in the audience, he hoped they would be brought to the notice of Captain Barker and Mr. Jarrett so that an accurate differential diagnosis might be made. He trusted that members would excuse him from the usual chairman's function of trying to summarise the discussion. There were not many occasions on which he gave up, but this was one of them.

It only remained for them to accord to Dr. Stableforth, Mr. Hughes and the many other speakers a very hearty vote of thanks for giving them such an interesting afternoon.

The vote of thanks having been duly accorded by acclamation, the session concluded.

BRINGING IT HOME

"Give a pig a good home and you have a good pig," said a speaker at the British Veterinary Association's Annual Congress.

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No. 2.—PIG HOUSING IN RELATION TO HEALTH AND ECONOMY*

BY

D. S. SOUTAR, A.R.I.B.A., A.A. (Hons.) Dip.

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On the morning of Tuesday, September 8th, 1953, there was again a full attendance in the Music Hall, Aberdeen, for the consideration of the above paper, which was illustrated by lantern slides. The Chairman was Mr. H. M. Wilson, M.R.C.V.S., of Cupar, Fife, and the Recording Secretary, Mr. M. Maclellan, M.R.C.V.S., of Laurencekirk.

The Chairman: Ladies and gentlemen, this morning we are to discuss the paper by Mr. Soutar on Pig Housing in Relation to Health and Economy. Yesterday the Provost of Aberdeen in his address of welcome mentioned that he had just returned from Denmark and in one town there he was intrigued to find a piece of sculpture in the form of a sow with a litter of pigs. That would be a very suitable erection for Aberdeen because Aberdeenshire is the county in Scotland with the highest number of pigs.

I am indebted to the Department of Agriculture for Scotland for providing me with figures of the pig population of Great Britain prior to the last war and in 1952.

In Scotland in 1939 the number was 252,264, in 1952 446,781; in England and Wales in 1939 it was 3,515,101, in 1952 3,839,847; in Northern Ireland in 1939 it was 627,125, in 1952 675,807. Those figures show the tremendous increase in the pig population which looks as though it is still on the increase.

Mr. Soutar is an architect who wished to be a farmer and he is now trying to marry farming and architecture together. He was in private practice in Dundee. He came to Aberdeen in 1948 on the inauguration of the Farm Buildings Department of the North Scotland College of Agriculture. This was the first department of its kind in Scotland and Mr. Soutar was in charge of it.

Mr. Soutar's special interest was in pig housing because of the large increase in the pig population in North-East Scotland and because in the North-East the farmers are enterprising and enthusiastic and co-operative. He has travelled extensively and was recently in the United States of America to study and lecture on farm buildings. The duties of his present post take him all over the north of Scotland where he deals not only with individual problems but he also lectures to groups of farmers. Last year he addressed the British Society for Animal Production. This is the first occasion, however, on which he has addressed an audience of veterinary surgeons. I will now call upon Mr. Soutar, and I have great pleasure in doing so, to make some remarks apropos this paper.

Introduction

Mr. Soutar then introduced his paper as follows:—

May I first thank your Association for the honour it has accorded to me by inviting me to present to your Annual Congress a paper on pig housing. This paper contains no new scientific findings or head-line discoveries—rather is it a summary of the developments of the N.E. pig renaissance as affecting housing as seen by my colleagues and myself. It is a summary of co-operative effort of the research worker, the field adviser, and last but of great importance,

* Presented to the 71st Annual Meeting and Congress of the British Veterinary Association, at Aberdeen, on September 8th, 1953.

the enterprising and enthusiastic practical farmer. Lacking, as we do, the funds for comprehensive experimental and development work, little advance could have been made without the great assistance so readily given by our country's most progressive farmers—and speaking as a "North-Easter" you can guess to whom I refer.

In order to make the most of the short time allocated for the introduction of this paper I do not propose to give you a summary précis of its contents, but rather I would like to take the opportunity of illustrating by means of lantern slides some of the factors involved. But before doing so may I make one or two observations.

(1) The recent reductions in the profit in pig-keeping will generally lead to an all-round economy drive in the industry, and this will have the immediate effect of curtailing capital expenditure on housing. By all means let us build the cheapest possible houses, but never, never, at the expense of the environmental conditions of the pig. By carefully detailed design and the wise selection of materials much can be saved, but any lowering of the general housing standards, already beyond an economic low on the average, will mean the suicide of those involved.

(2) I would like to make a plea for healthy constructive criticism of pig housing designs with a wholesale exchange of ideas between the various centres now involved in development work. In the N.E. we welcome as many view-points as possible and thus we appear to progress.

(3) Before any design is copied, because of its particular success, it is essential to understand the fundamentals and their relation to the particular circumstances involved. Far too often does one see recognised designs adapted to circumstances for which they are not suitable, and again often important details are omitted altogether.

(4) In view of the admitted importance of good housing in the economic production of pigs, steps should be taken to instigate the necessary scientific research on the optimum environmental conditions required by the pig. Pending such findings, pig houses, of different designs, might be erected in three or four centres to demonstrate and test the value of houses designed from practical observations. At the very least there should be formed a centre for the collection, assessment and dissemination of what information there is presently available at the various centres throughout the country.

(5) Certain dependable authorities on pig housing have recently been advocating the adoption of dark pig houses, artificial lighting being supplied at feeding times. The object of this recommendation is to reduce movement amongst the pigs. I would like to have the meeting's views on this point, as I have always been wary of adopting this approach in case careless husbandry might result.

(6) Lest anyone should think that no actual research work is presently being carried out on the environmental conditions in piggeries, I would like to mention the valuable work now being carried out by Mr. D. W. B. Sainsbury, of the Royal Veterinary College, who is making comparative analysis of the environmental conditions in various types of piggeries in the South and relating such to the thriftiness of the pig. This work deserves our thanks and should receive all encouragement.

[The essayist then showed a series of slides as a graphic summary of the contents of his paper, which was as follows.]

The importance of providing the domesticated pig with housing which will afford correct environmental conditions for its thriftiness is accepted by pig-keepers to-day as one of the first essentials towards economical production. The realisation of this fact is by no means a prerogative of this age as translations of Roman edicts on the subject have proved, nor is the problem confined to our Islands alone. During the expansion of the pig industry over the past fifty years progressive producers have realised the losses incurred through bad housing conditions and within the scope of their own enterprises have endeavoured to ameliorate the failings of faulty traditional designs. The works of such men stand out as stepping-stones to the prosperity of the industry to-day. Perhaps the most influential preacher of recent years was the late A. A. McGuckian, of Northern Ireland, who, determined to turn an annual pig mortality of 30 per cent. into increased profit, studied the pig's requirements from first principles and by his "back-to-nature" methods evolved a system of husbandry and housing which has had a very widespread and beneficial influence on current pig housing design. In his development work he had the co-operation of Lamont and Shanks, whose assistance he most readily acknowledged. McGuckian's "Insulate and Isolate" doctrine will always be remembered by those who were privileged to discuss pig housing problems with him, while his demand that we should not think in terms of disease and disinfection but rather of health as a positive thing which ought to be the birthright of every animal could well be reiterated whenever pig housing is discussed.

A survey of the pig housing in our country to-day would reveal a most unsatisfactory situation, particularly for a country so dependent on home food production. Any estimation of the National losses through bad housing can only be in the form of a wild guess, but the figure might easily exceed £4,000,000. A recent survey in Denmark of the effect of piggery construction on production showed that in the poorest third of the piggeries inspected it required an extra £3 8s. 9d. of food per pig compared with the best houses to produce the finished bacon pig. It also showed that the worst houses (average capacity 28) could have been brought up to the standard of the best houses for an outlay of £170. Thus the improvement costs would be paid off by the first two batches of pigs, leaving the farmer with an additional profit of £3 8s. 9d. for every future pig produced. There is probably little reason to believe that similar results would not be obtained from a survey of pig housing in this country, although the possible saving might not be so great, due to the very large expenditure required to improve our worst classes of houses and also to the fact that many of our pigs are produced in temporary folds and similar structures.

While the improvement of existing pig houses might even be considered to be a National requirement, the standard of design and construction of new pig housing, on which hundreds of thousands of pounds are spent annually, must surely be raised far above present-day levels. In the Agricultural Press descriptions of many good new piggeries are published, but for every such satisfactory building erected many structures of fundamentally wrong conception both in design and construction are being built, structures which will severely handicap the producer from the very outset and which will limit rather than increase our chances of attaining the desired food production target.

In the past most pig housing in this country was based on the traditional sty which often afforded good results on a limited scale, or else it took the vague form of the type of house popular in Scandinavian countries. In neither case was the house designed from first principles —those principles of proper environment illustrated so

well by the wild pig and which we now endeavour to combine, perforce, in designs for its housing under domesticated conditions, often on a large scale. The warm, dry bed, access to fresh air and sunlight and freedom to dung away from its bed, those conditions enjoyed by the wild pig, are wisely and frequently repeated by most pig housing enthusiasts as the principles on which we should base our work. The domesticated pig has even less protective covering than its wild counterpart and is thus even more sensitive to environmental shortcomings. However, the farmer's interest in the pig's comfort is not an end in itself, and in considering his pig housing requirements he has to plan for those environmental conditions which will allow the pig to thrive with maximum efficiency, coupled with an arrangement and layout of buildings which will achieve maximum economies in labour requirements and all at an economical capital outlay. Furthermore, as most of our pigs are produced by "general" farmers it is a further condition that the pig unit must form an integral part of the husbandry system. As a wide variety of husbandry practices are dictated by superimposed conditions it is only natural to expect a variety of forms of pig husbandry and housing.

Research and Development

It is surprising and disappointing to find in a country so dependent on home-produced food that so little research and controlled development work has been carried out on one of the most important factors in the success of such a valuable contributor to the National larder as the pig industry. Work, great in its importance if only for its rarity quite apart from its findings, has been carried out by certain individuals, but such have had to work with very limited means and often under certain specific conditions which have affected their findings materially.

"Hygienic Aspects of Pig Housing—A Review," written by J. S. S. Inglis and A. Robertson and published in 1949 (*Vet. Rec.*, **61**. 141) gives a very valuable account of pig housing research to date. In their conclusions the authors state, "In spite of the voluminous nature of the literature on the subject and of a certain amount of data obtained in other countries, it is still true to say that far too little is known of the fundamental requirements for optimum environmental conditions in pig houses . . . . We can give, moreover, little or no definite guidance to the designers of pig houses as to the optimum temperature conditions, essential air flow, desirable cubic space, etc., as present opinions frequently are conflicting and have often been based on observations either frankly empirical or invalidated by inadequate attention to other important factors, such as nutrition or specific disease. It is our considered opinion, therefore, that if the community is to reap the maximum benefit from any future extension of the pig industry, detailed investigation into all aspects of the relationship of housing to health and productivity under controlled experimental conditions is urgently necessary." This urgently required experimental work has not been given the priority it deserved. In America work carried out by Heitman and Hughes showed that the rate of gain was greatest and the amount of feed required to produce 100 lbs. gain was least at an average temperature of approximately 75°F. for hogs weighing 70 to 144 lbs. and approximately 60°F. for hogs weighing 166 to 260 lbs. However, with this exception the designer of pig housing has had to base his factors on the developments of practical pig producers and institutions working usually under local limitations.

At the Duthie Stock Farm of the Rowett Institute development work of importance was instigated when the usual troubles associated with large capacity central-passage type uninsulated piggeries were experienced. Having observed the healthy vigour of the neighbouring cottars' pigs housed in traditional sties and the thriftiness of the original stock when placed in such sties, far-reaching modifications to the then existing conceptions of pig housing were obviously required and development work on "back-to-nature" principles followed with consequent well-known success.

In Northern Ireland, A. A. McGuckian, determined to overcome similar troubles as had beset the Rowett Institute, developed his "isolation" creed for the housing of sows and litters, and for his feeders he designed his now well-known house of limited cubic capacity and floor space, within well-insulated walls, floor and roof, with access to fresh air and sunlight by means of baffled entrances and shaded porch, together with a controlled ventilation system which compares well with the wild pig's environment of a warm, dry bed, access to fresh air and sunlight and freedom to dung away from its bed. The influence and benefits derived from McGuckian's housing developments cannot yet be assessed, but his efforts and teachings will long receive the praise of those who follow his lead. McGuckian achieved his successes in a feeding piggery with a temperature constantly between 75° to 80°, absolutely bone-dry floors and all dunging in the outer yard.

In England, W. T. Price at Harper Adams Agricultural College has designed a house providing natural environmental conditions similar to those achieved by McGuckian, while to minimise the drudgery of the daily cleaning routine he has incorporated an outside yard which can be strawed deeply to contain the pigs' dung and which only requires periodic cleaning.

In the North of Scotland many enterprising farmers have enlisted the co-operation of the College of Agriculture in designing a number of pig houses based on those fundamentals now recognised as essential to the thriftiness of the pig, and their performance is having quite a widespread influence on the many visitors who annually inspect farm developments in this area. In many cases the basic structure has been a building found redundant for its original purpose, while in all cases an effort is made to combine pig thriftiness with economy in labour and capital outlay.

In the absence of figures proven by controlled experiment the builder of pig houses may use the undernoted approximations, which are based on observations of good practice, as a guide to his designs.

Farrowing Pens: Bed 8ft. 0ins. x 5ft. 0ins. for sow and litter.
Similar area (minimum) for dunging and feeding, whether inside or out.
Corner or side nests require 5ft. 0ins. frontage to pen.
Bed floor to lower edge of nest rail, 9ins.
Farrowing rails 9ins. from floor and 9ins. from wall.
Heat lamps must be protected from sow.
Creep feeding facilities should be included.

Feeding Pens: Bacon pigs require 5 square feet bedded area and 6 to 10 square feet feeding and dunging area. Where

feeding is in bedded area allow 6 to 7 square feet per pig and 4 square feet in dunging pass or 6 square feet if outside yard.

Minimum width of pen at trough—small pen 5ft. 0ins., large pen 6ft. 0ins.

Trough Space: 12ins. (internal) wide glazed fireclay trough. Sows 20 lin. inches, feeders 12 to 14 lin. inches.

Self-feeders, 2½ pigs per self-feeder division.

Water Requirements: Feeders 1½ gallons per day.
Nursing sow 4 gallons per day.

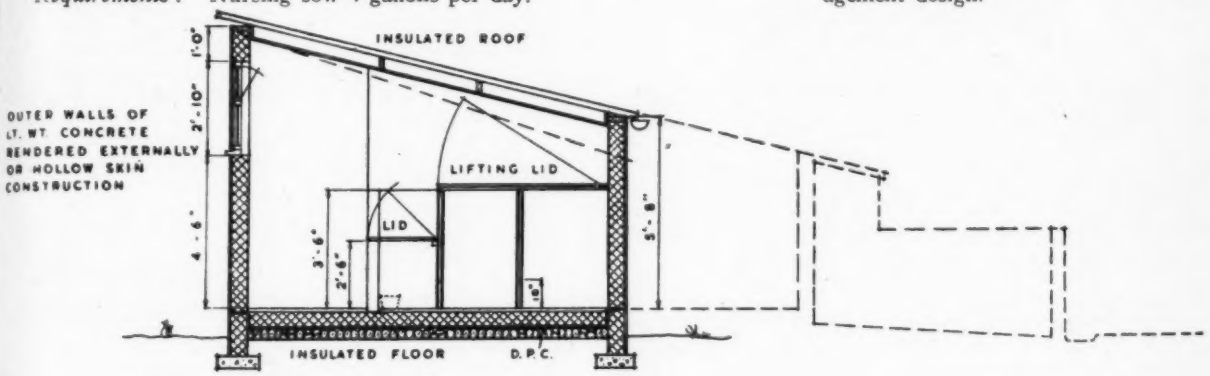
Water must be readily available when self-feeders are used.

Allow 1 water bowl per 10 or 12 feeders.

House Temperature (Sleeping quarters)
Farrowing sows 60° to 70°F.
Piglet brooders or nests, 70°F.
Feeders 70 to 144 lbs., 70°F.
140 to 260 lbs., 60°F.

House Cubic Capacity: Warm kennels 20 cubic feet per bacon pig.

Insulated houses 50 cubic feet. This figure is the target but is greatly affected by construction and management design.



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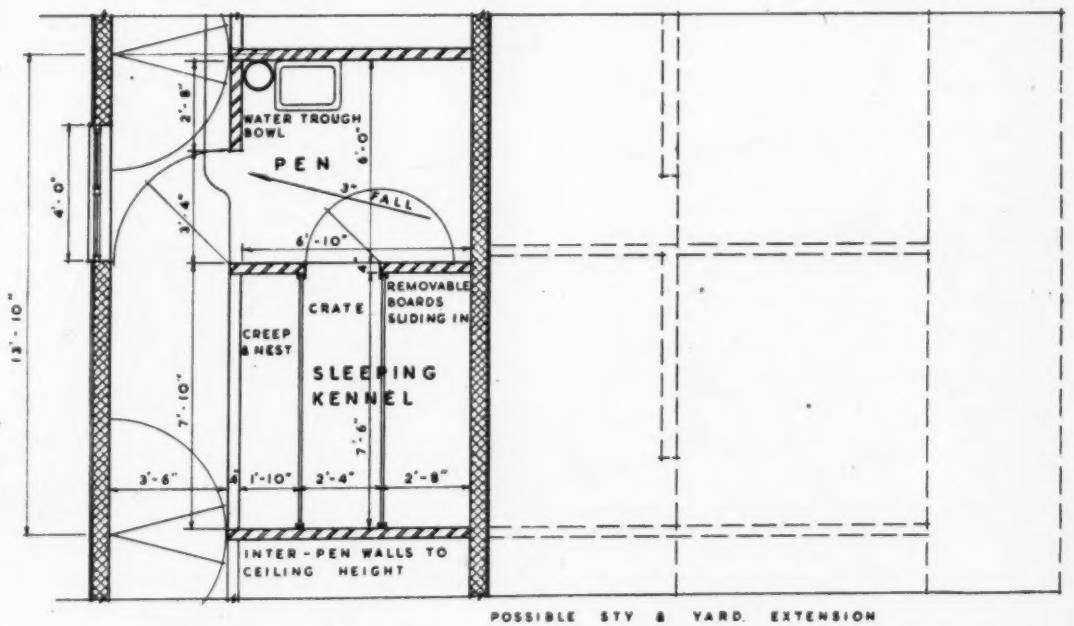


PLAN

FARROWING & REARING PEN

Fig. I. (See page 732.)

Ventilation:	Allow free air-flow in main house.
Warm Kennel Houses:	Doorway will allow ample air circulation in kennel, but lifting roof or auxiliary opening will serve for emergency summer use.
Insulated Houses:	*Inlets*: Allow 6 square inches per pig, using baffled adjustable inlets spaced throughout the building.
	Outlets: Single insulated extract shaft allowing 6 square inches per pig cross sectional area.

Fundamental Factors in Piggery Design

A successful piggery must provide conditions for the maximum thriftiness of the pig under a system of housing which will allow the maximum saving in labour and all at an economic capital outlay. Furthermore, when forming part of a general farming enterprise the pig production unit must be designed as an integral part of the whole husbandry system.

Factors Affecting the Pig

In assessing the fundamental factors in piggery design the thriftiness of the pig, on which the whole success or failure of the enterprise depends, may well be considered first, and this may be studied in the oft-quoted terms of the "dry, warm bed, access to fresh air and freedom to dung away from its bed."

The Dry Bed—The provision of a warm, dry bed for the pig is partly a matter of design and construction and partly of management. Here advantage is taken of the natural trait of the pig to dung away from its bed. By giving it an obvious bed of minimum area required, and easy access to a dunging area, the pig will follow its natural traits and respect its bed. By steeply sloping all floors save the actual bed in order to run off the urine, and by forming steps and bedding-retaining kerbs between bedded area and the remainder of the house or yard, the bedded area can be kept perfectly dry. Water bowls, if placed in the bedded area for frost protection, must be sited near the door to the yard or dung passage and have a spillage channel under them to direct any overflow out of the pen.

Piggeries designed with outside dung yards should be equipped with covered porches or verandahs between the yard and bedded area so that in bad weather the pigs can leave the bedded area to dung without having to suffer inclement conditions. To encourage pigs to dung in the required area they may be kept in the said area for a short time pending admittance to the bedded area, while the placing of pig dung in the dunging area prior to the admittance of the pigs to the pen is sometimes practised. If young pigs are to be placed in a house initially too large in bedded area the latter may be limited by temporary hurdles. When the above design and management factors are combined with correct construction, as detailed later in this paper, dry bedded areas readily can be achieved.

Warmth — Insulation. It is a general practice to endeavour to retain the pigs' body heat as the sole heat source in the building, except in the case of sows and litters, when supplementary heat is provided. To this end insulated construction is employed, together with a restricted cubic capacity and a restricted air-flow regulated by a controlled ventilation system. If a reasonable heat is to be maintained, without an undesirable degree of humidity, every effort must be made to exclude dampness from the heat conserving area. To this end dunging and urinating must be away from this area, either in outside yards or in screened off, freely ventilated dung passages. If swill or wet feeding is to be practised, serious consideration should be given to the possibility of doing so outside the heat conserving area. The other details mentioned as essential to the provision of a dry bed also assist in reducing internal humidity. The cubic capacity of a heat conserving house must be kept to a minimum, and this is no easy task in the type of house providing sleeping and feeding space for the pigs and management facilities for the pigman, 50 to 60 cubic feet per pig being a target figure.

To retain the body heat of the pigs within the building it is essential to use construction of high thermal insulation qualities, as detailed later in this paper. This is not traditional to our rural builders and great care must be taken to ensure that they follow their instructions clearly. As endeavours are made to give the pig its warm environment so condensation problems are increased and specialist advice on this matter is well worth while. Generally speaking, the materials used in insulated construction are of a cellular nature, and under extreme conditions great care must be taken to ensure that the warm, humid vapour does not permeate the insulation material and condense internally—therefore the rule to be adopted is "vapour-seal on the warm side and ventilate the cold side." An exception to this principle is demonstrated by the "breathing ceiling" of straw or blanket insulation which allows an extremely slow and gradual cooling process of the warm air as it passes through the "blanket" while the area over the blanket is freely ventilated.

All construction cracks must be eliminated if the maximum value is to be achieved from the insulated construction, as the draughts caused by, say, an ill-fitting door can steal away completely the warmth which the insulation endeavours to retain.

The thinly covered pig is most susceptible to sudden temperature changes and draughts. Prevention of both these evils can be effected by proper siting and designing of the piggery. Through draughts must be eliminated at all cost, and therefore if outside runs are required they should be sited on one side of the building only, and even then, baffled walls are advisable as windbreaks. It is also advisable to have frequent cross divisions in a piggery having outside yards in order to prevent draughts entering one pen and coming out at another. Such divisions are also useful in assisting in localised heat retention should part of the piggery be empty.

In converting uninsulated buildings of large cubic capacity the warmth of the pigs' sleeping quarters can best be assured by forming a low-walled "kennel" as part of the actual pen—rather on the lines of the traditional pig sty. In some new houses this principle is adopted as the basis of design.

The use of artificial heat, such as electrically heated floors, as a means to increase pig thriftiness, has yet to be proved an economical necessity, but there is no doubt as to the value of artificial heating where the sow and litter are concerned. A farrowing sow requires a proportionately greater floor area and house cubic capacity for her own living and for the pigman who attends her than does the bacon pig, and as her body cannot warm this area to the generally required temperature of 65° to 70°, however well designed the house may be, some form of supplementary heating is essential. In this sphere the infra-red heat lamp is ideal as it is very flexible in use and can readily be fitted over the piglets' nest in such a way as to warm both piglets and sow. In order to preserve the augmented heat required by the piglets, low-roofed nests

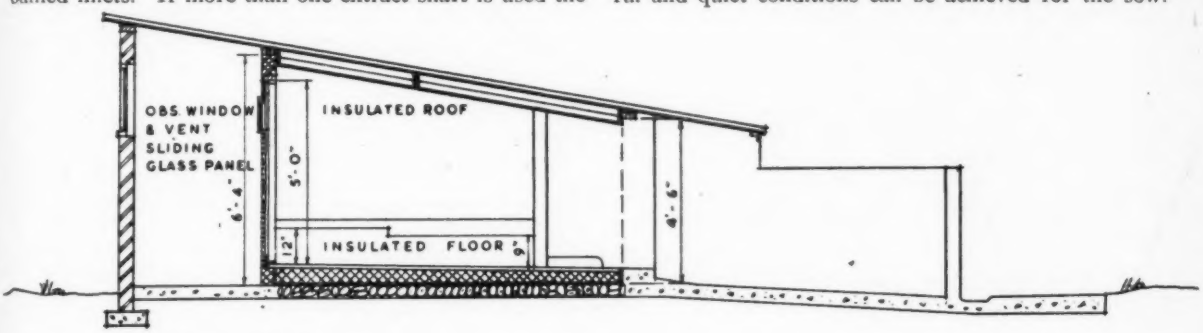
readily can be provided which not only conserve heat and minimise draughts, but also protect the piglets from possible injury by a clumsy sow.

Fresh Air—Ventilation. In kennel type piggeries ample fresh air from the entrance door will circulate within the "kennel" although a secondary controlled ventilation opening is advisable for summer use. In cottager type piggeries the pigs have direct access to open yards; in kennel type piggeries a free flow of air throughout the main building affords fresh air and eliminates condensation, while the pigs are warm and comfortable in their draught-free quarters.

In the insulated, heat conserving piggery the ventilation system must be integral with the design as a whole. Where outside yards are provided all necessary fresh air intake will come through the door, while in enclosed piggeries adjustable baffled inlets at high level should be spaced throughout the building. These should have a total cross sectional area of 6 square inches per pig. Extract ventilation is best achieved by means of a central extract shaft fitted with a control shutter and having a cross sectional area of 6 square inches per pig. In a piggery comprising a number of "sealed" compartments each must be considered as a separate unit with separate extract shaft and baffled inlets. If more than one extract shaft is used the air may tend to flow down one shaft and up the other(s). All ventilation shafts should be insulated in order to encourage natural air flow. Various extract shafts and shaft head designs are in common use and of these the "inverted cone" of Danish origin is one of the best.

In difficult cases, such as are often found in conversion work, an electrically powered fan may well be used to assist the air flow. Mechanically assisted ventilation may likewise be used to overcome natural air flow difficulties inflicted by structural design factors.

Hygiene: Inter-pen Isolation and Dunging Areas. In all pen layouts the pig should be enabled to dung away from the warm bedded area either in an outside yard or screened off dung passage. This is not only essential for the health of the pig but also to facilitate the task of manure removal. In most piggery designs the degree of inter-pen isolation to be provided clashes with the labour-saving factors afforded by inter-pen cleaning and the saving in capital outlay effected by having low-divisioned pens within a large building. The value of isolating sows and litters as a preventative against the spread of disease, particularly piglet influenza, was one of McGuckian's most important housing edicts which is widely acclaimed. Not only is the health of the litter safeguarded but peaceful and quiet conditions can be achieved for the sow.



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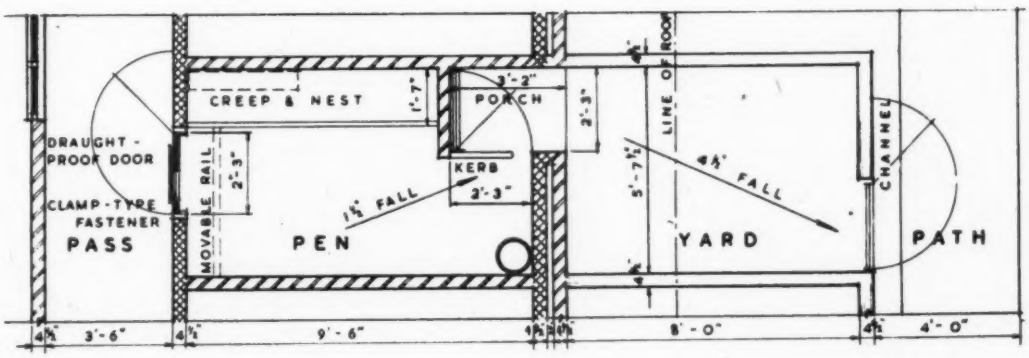


PLAN

FARROWING & REARING PEN WITH OUTSIDE YARD

Fig. II. (See page 732.)

The daily cleaning of a piggery is the least attractive and most labour consuming task on many pig farms and therefore any efforts made to facilitate this task are most welcome. The dung pass with through-pen cleaning arrangements, whether manual or mechanical, does assist the labour requirement and is generally more acceptable where bacon pigs are concerned. However, even with baconers many pig producers prefer the lesser disturbance and increased isolation afforded by plans designed to give direct access from the outside to the individual pens. Where ample straw for bedding is available labour-saving dunging arrangements can be combined with the isolation factor when individual deep-dung yards, which only require periodic cleaning by mechanical means, are provided for each pen.

Factors Affecting Economy in Labour and Capital Outlay

Type and Size of Unit. In planning his pig housing the farmer must decide on the size and nature of his enterprise as an economical and possibly expanding unit within his whole farming scheme. A number of husbandry principles must be determined and their relative merits assessed. Is he to breed, feed, or, as is often best, do both? If he is to breed should he use portable houses or fixed houses? Should outside runs be used for all or any class of stock? Should feeding be inside or outside and if outside, must it be under cover? Should self-feeders be used or must the pens be designed to allow 12ins. to 14ins. trough space per bacon pig? Are pigs to be fed wet or are water bowls to be provided?

The number, size and types of pens must be determined from the type of enterprise planned. In designing a feeding piggery the greater number of pigs per pen will reduce the capital outlay and labour requirement, but many farmers prefer to restrict their pen sizes to 8 to 10 pigs for maximum economy in feed conversion. The general purpose pen in which a sow can farrow and the off-spring eventually be fed off in the same pen has much to recommend it. Where special type pens are involved their number and inter-relation must be carefully considered.

For economy the unit should be planned in relation to the labour force available, preferably in man-units. The care of bacon pigs may be tackled in a more wholesale manner than the husbandry of breeding stock which amply repays patience and attention to detail, and therefore the pigman in charge of the latter should never be unduly overloaded with work.

In actual practice all the diverse housing factors can seldom, if ever, be incorporated in any one design and certain compromises have to be made. Factors pertaining to the health of the pig may conflict with those of labour-saving and the comfort of the pigman, while the merits of all the former factors have to be assessed in terms of capital outlay.

Siting and Layout. Great care must be taken in the siting of any piggery, both from the point of pig health and of economy. The site must be reasonably sheltered, while a southerly exposure is essential if outside runs are to be used. "Frost pockets" and sites liable to sudden or frequent temperature changes should be avoided. Savings in outlay can be achieved when full use is made of existing roads, water and electricity supplies. The piggery may be sited to take advantage of existing feed stores and of natural falls for drainage purposes and for ease in manually handling heavy wheeled loads, including dung. Further, a sloping site may afford economies in building when the design is related to the site as in a piggery with a low-level dung yard.

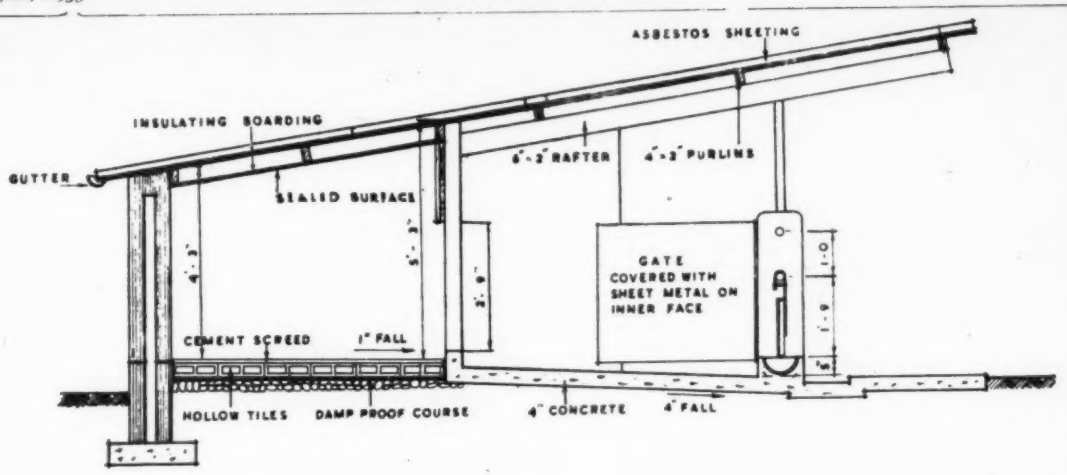
The actual layout of the units comprising a piggery, especially when large-scale production is concerned, must be designed on "factory lines" with emphasis on the "step-saving" planning of all operations involved, the handling of feed-stuffs, the feeding of the pigs, weighing and ear-marking piglets, checking weights of baconers and loading them for the factory.

Pen Design. Care should be taken in detailed pen design if all the many requirements are to be answered. The size and shape of the pen will depend on its purpose, and the required sizes may have to be related to structural design factors. Designs based on the basic information already given are included at the end of this paper. Feeding must be easily accomplished and while self-feeders, filled from the main feed passage, and perhaps of the double-sided variety and used as part of the inter-pen division, certainly reduce labour outlays, facilities for controlled feeding in a certain number of pens may well be arranged if carcase quality is to be achieved.

Troughs should be lined in glazed fireclay and can have fixed rail or swing fronts. The latter type, which shut the pigs off the trough when desired, often aid the daily work programme. In designing any trough remember that it must be suitable for filling at a fairly high speed without spillage and without undue care on the pigman's part, while it should also be designed to eliminate wastage by the pig.

The watering of the pigs is best by piped supply, either to automatic water bowls or to points adjacent to the troughs. As previously stated, water bowls must be placed to avoid spillage in the pen and for hygienic reasons may well have lifting lids. In rearing pens a small step or ramp at one side of the bowl will allow the piglets access to water and this is essential if maximum creep feeding is required. When self-feeders are used ample water must be readily available for maximum weight gains. Where a piped supply is unavailable water barrels can be fitted with drinking bowls. Frost precautions taken at the initial installation will be amply repaid.

The removal of dung from a piggery, as previously stated, is usually the most time-consuming and least agreeable of tasks in the pigman's routine. The fact that the pig will dung in a particular area of its quarters is most advantageous when planning the method of dung removal. If the value of inter-pen isolation is to be overthrown in preference to labour-saving, then the through cleaning of pens, whether they have covered dung passes or open outside yards, can be arranged by using swing gate divisions which shut the pigs in the bedded quarters, thus allowing free end-to-end movement in the dung passage or yard. In narrow dung passages traditionally the manure is shovelled into a barrow for disposal, but now mechanically-operated scraper-belts and shovel-type buckets are being developed for the conveyance of the manure to a manure pit at the end of the piggery. Where wide dung passages are planned tractor-mounted bucket scoops and tractor-mounted scraper blades are used for this purpose. Where inter-pen isolation is demanded and dunging is in outside yards the simplest layout involves a manure pit running parallel to and the full length of the yards from which the manure is thrown direct. The latest developments in manure disposal, however, maintain inter-pen isolation and also minimise the dunging-out task by forming dung-containing yards to each pen. These are well strawed and require emptying only every two months or so. Such yards



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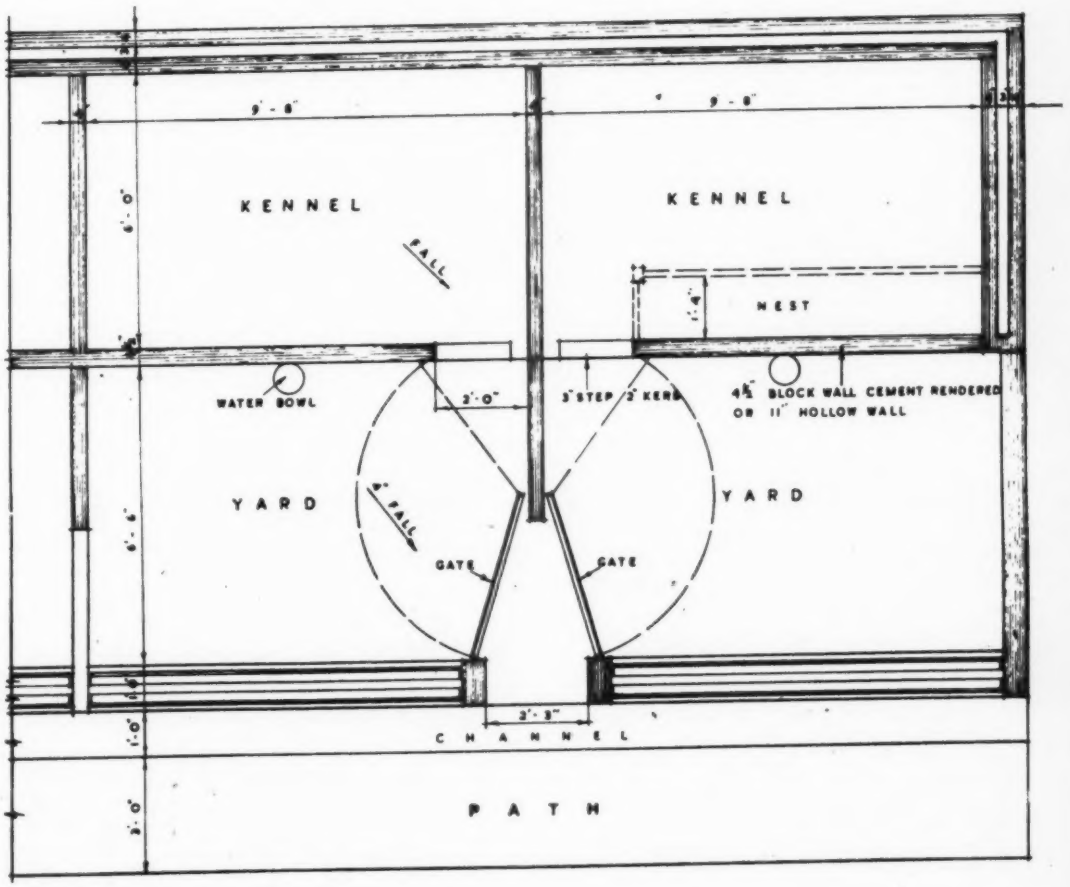


PLAN

IMPROVED COTTARS PIGGERY

SCALE ONE HALF INCH EQUALS ONE FOOT

Fig. III. (See page 733.)

are unsuitable for areas where straw is in short supply, while experience in North-East Scotland dictates that in areas of similar rainfall a roof over the yard is an essential.

Management factors must be carefully studied in pen design. The farrowing sow can be controlled to the various degrees required by husbandry practices; the young pigs can be given protective rails and nest and separate creepfeeding facilities. It is also advisable to plan for their easy handling without interference from the sow for ear-marking, castrating and weighing. Feeding piggeries must be designed to incorporate easy handling of the pigs for weighing and loading. Sow quarters may be planned with easy access to the boar's pen, which may have a run incorporating a service crate.

Piggery Construction

While good pig housing can be of simple construction and does not call for any special materials, the standard of detail now required is far more exacting than that commonly used by rural builders on the farm, and time, patience and initiative are often required to achieve the desired results. The rough finish accorded to farm buildings by tradition is unsuitable where heat-conserving insulated houses are being built, and anyone contemplating the erection of such houses would be well advised to employ the professional advice of an architect or surveyor who can make detailed drawings sufficient to ensure the proper use of materials, standard of finishing, runs of floors and drains, etc. The range of materials employed is very wide and may well be influenced by their availability, situation and local practice.

As in the design problem the question of what hygienic standards are required clashes not with the labour-saving factor, as in the former case, but with pig comfort standards. There is little doubt that wood makes the most comfortable bed and walls to a piggery in that it has a high thermal insulation value and does not assist as a cooling agency to the pig's body. However, it is difficult to disinfect and is liable to damage by the pigs. A smoothly rendered, cement plaster finish is readily disinfected, but acts as a cooling conductor to the pig lying in contact therewith. A reasonable compromise may be claimed by using an insulated floor with this cement screed over-lay to allow of periodic washing out, with walls of "no-fines" concrete or common brick.

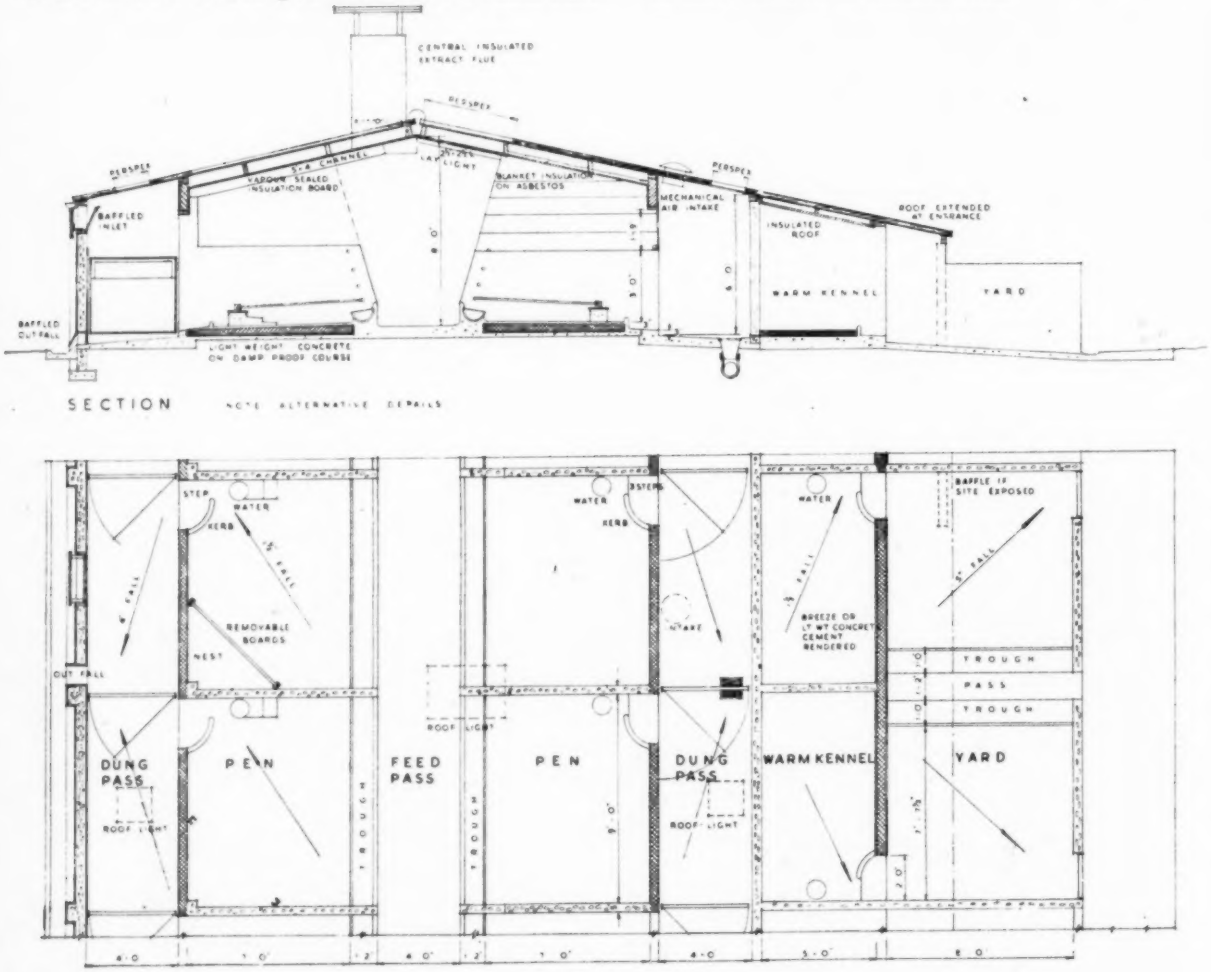


Fig. IV. (See page 733.)

Floors. The bedded area whereon the pigs lie has to be floored in such a way as to prevent the conduction of the body heat of the pigs into Mother Earth, to ensure against its permeation by ground moisture and to provide a reasonable non-slip surface capable of periodic disinfection. These conditions can be satisfied by laying an impermeable damp-proof course of bitumen or asphalt on the rough surface concrete as a basis, and covering this with a 4in. or 6in. layer of lightweight insulation concrete, hollow tiles or similar material, and finishing off with a 1in. or 1½in. cement-sand screed off a wood float, roughing the screed by bouncing a stable broom on it just before its initial "set." Various lightweight aggregates are now available as ingredients in insulation concrete, but where such are not available an 8 to 1 mix of ¾in. breeze and cement, with no sand, provides a satisfactory answer.

As stated previously, floors on which the pigs do not lie should be laid to a steep fall (1 :15) to ensure a speedy run off of all liquids; they can be of coarse concrete and should be given a very rough finish to ensure ample foothold for the pigs.

Walls. Exterior walls to heat-conserving areas are usually built of brick or concrete blocks of double-skin construction, and in such cases the inner skin may well be built of lightweight aggregate "no-fines" blocks to assist in heat-conservation. Alternatively, single skin walls of insulation blocks, rendered externally, may be used. Inner walls, inter-pen divisions and walls not containing heat-retaining areas may be of single skin brick or concrete construction. Insulation plasters containing "Vermiculite" can be used to advantage when forming pig housing in existing buildings of doubtful thermal insulation.

Roofs. Roofs of piggeries may be considered in two sections, the outer coverings for weather protection and, where required for heat-conservation, the inner insulation linings. The former are generally formed of corrugated sheeting of aluminium, asbestos or galvanised iron. Inner insulation linings may be fixed to the underside of the structural members which carry the outer sheeting or to sub-framing in the form of a ceiling. This choice depends on the cross-sectional design of the piggery. In wide spans the ceiling is usually formed at "tie level" in order to reduce the cubic content of the building. Composition *softboard* is easily fixed as a ceiling or roof lining and is best "vapour-sealed" on its underside with plastic emulsion paint or aluminium flake paint, the latter supplying heat and light reflection as well. A very satisfactory "heat barrier" lining can be made by using ¼in. flat asbestos sheeting covered with glass-wool or similar blanket insulation or "loose fill" insulation such as "Vermiculite."

Whatever type of insulation lining is used it must be ventilated on its "cool" side to safeguard against possible internal condensation.

Windows. In fully insulated construction window glazing, both in roof and walls, should be "double" to reduce heat losses and condensation and the humid atmosphere the latter can create. If the windows are very small in area single glazing and subsequent condensation and humidity may be accepted as a justifiable economy.

Some Pig Housing Types

In-pig and Dry Sow Housing

Where possible husbandry principles usually dictate that sows should be run on pasture or rough ground during the gestation period so that they gain robust health and an ample supply of minerals. Their housing can be simple, as they merely require protection from wind and rain, and many types of improvised housing suffice. However, long-term economy dictates the use of portable single-skin huts of vertical side design, some 10ft. 0ins. x 8ft. 0ins., with central door 3ft. 0ins. x 2ft. 0ins. Where rough ground facilities are not available sows are well housed in courts, preferably with outside yards. The individual feeding of these females is necessary to ensure freedom from bullying, and a skid-mounted portable feeder is available for open-air housing, while permanent stall type individual feeders easily can be built in to most courts or yards. A portable fitment worth considering here is the service crate which enables the easy handling of sow and boar.

Farrowing and Rearing Arks

The ark system of housing for sows and litters has many advantages in that it offers the pig conditions very akin to those provided by Mother Nature, a dry heat-conserving lair with access to fresh air and sunshine, as well as giving the young pigs the advantage of obtaining from the earth those minerals so essential to their well-being. Further, the ark is a small unit which can be bought or sold as required and as such it appeals to the tenant farmer. Arks are used successfully with fold runs attached, when regular moving ensures fresh, clean ground for the pigs, with the sow on a tether and giving the piglets free range, or within electrically fenced temporary paddocks and on free range. In winter, if field conditions restrict the necessary mobility, the arks can be placed with their folds on a concrete strip which is cleaned daily, while in this position supplementary heat readily can be supplied. Ark-reared pigs, as a general rule, are healthier than indoor-reared pigs. However, while the system affords ideal conditions for the pigs, the attendant must be an "all-weather man," ample ground of a fairly free-draining nature is required, and traction has to be supplied for their regular moving. In spite of these latter drawbacks the system is very popular, especially with those who put pig health above all other considerations.

Various forms of ark are employed depending on individual requirements, but all types must be draught-proof and of sound construction, with walls sufficiently insulated to retain the heat of the sow and litter. This is usually achieved by double-skin construction in wood or metal sheeting, with an insulating inter-layer of glass-wool, wood-waste or similar material. The pigs' door should be off-set to allow the maximum sheltered floor area, or a baffle built-in for this purpose. A sack hung over the pigs' door assists in preventing too great an airflow within the ark. Where incorporated, the attendant's door should be draught-proof, being pressed tightly against rubber-lined door stops by clamp handles. The floors should be of treated T. and G. boarding. A nest for the young pigs ensures their increased warmth, while creep feeding facilities are best provided by a stall-type creep of four stalls with movable trough. The ark should be designed to be of minimum cubic capacity commensurate with sufficient room for sow and litter and the working of the pigman.

Farrowing and Rearing Houses

The use of arks for farrowing and rearing all the year round is common practice, but some farmers prefer the greater convenience of farrowing crates or special pens for the actual farrowing, taking the sows and litters to the arks when the piglets are a few days old. The value of farrowing crates is a much debated point, but they cer-

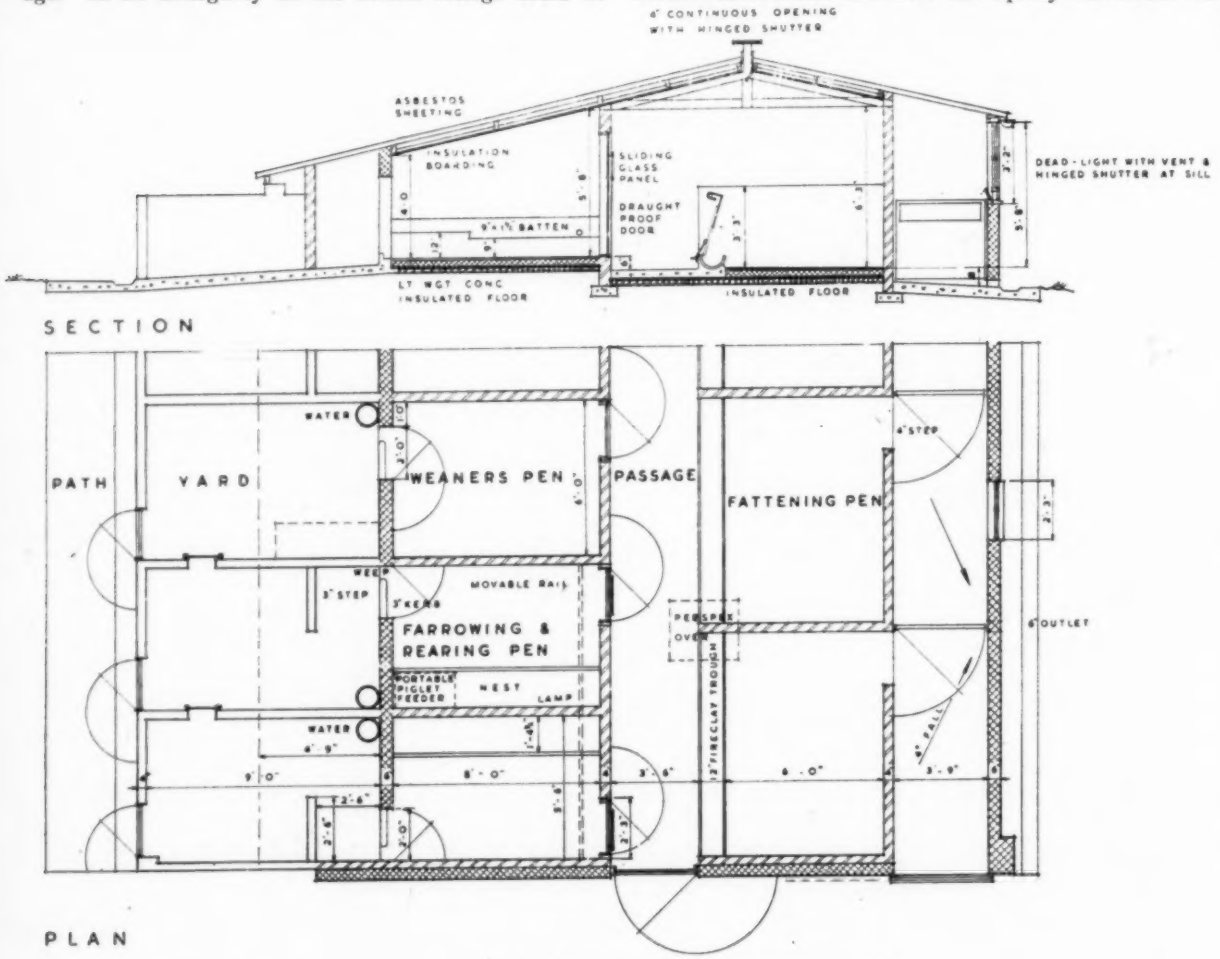
tainly allow of easy control of a difficult sow, as well as protection and localised supplementary heat for the young pigs. In designing permanent farrowing accommodation facilities for ease of control of the sow must be combined with protective accommodation for the piglets, usually in nest form with supplementary heat, and means of creep-feeding the young pigs. The reduction of the cubic content of the pen within a heat-conserving structure is of vital importance as the management area required for the sow and litter is relatively large in relation to their body-heat output. The complete isolation of litters should be practised whenever possible and access to outside yards, wherein the young pigs can enjoy the benefits of fresh air and direct sunlight, is considered a valuable asset.

Farrowing and Rearing Pen (*Fig. I*). This example of an all-inside pen affords crate facilities for farrowing, but by removing the boards which form one side of the crate the sow can be given a roomy kennel once she has settled with her litter. The pen layout allows of easy supervision and feeding of sow and litter from the passage. In an emergency all the kennel fittings could be removed and a full-size feeding trough fitted in the "Creep and Nest" in order to feed off seven bacon pigs.

Farrowing and Rearing Pen with Outside Run (*Fig. II*). Providing direct access to fresh air and sunlight, this house has advantages over the previous examples in that the sow is completely isolated and thus is less disturbed by piggery work, while grass runs for the piglets could readily be rotated on the ground in front of the outside yards. The sow would be fed from the outside and dunging-out likewise would not be undercover. The cross section of this simple house allows it to be built on as a lean-to to an existing building or incorporated in a design having a feeding house operated off the covered passage. Note that the open yard *must* have a southerly exposure.

General Purpose Houses

Such houses are most convenient for the small-scale producer for, as their name implies, they are generally suitable for all classes of stock. The sow and litter form a convenient planning unit, as the house designed to accommodate a sow and litter can equally well house the



CRAIBSTONE ALL PURPOSE PIGGERY

NOTE: OUTER WALLS OF BUILDING ARE OF 8" NO-FINES BLOCKS RENDERED EXTERNALLY
OTHER WALLS ARE OF 4" CONCRETE BLOCKS (UNRENDERED)

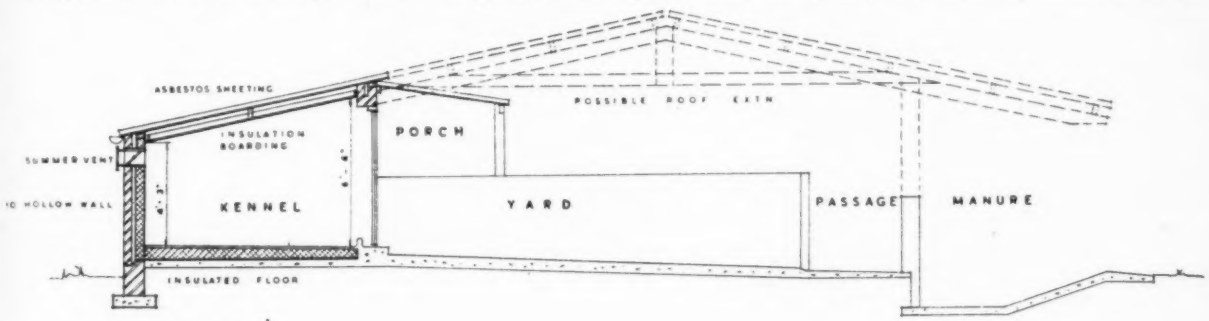
Fig. V. (See page 733.)

litter through to bacon-weight, while it is also suitable for a boar or three or four in-pig sows. Some pig-keepers like to carry their litters through to bacon-weight in the same pen from birth, claiming that the lack of environmental changes decreases the period to bacon-weight attainment by some seven to ten days and for this purpose the general purpose type of house is ideal.

Improved Cottar's Piggery (*Fig. III*). A refinement of the traditional pig sty designed for increased hygiene, pig comfort and easier management, it provides the pig with a warm, dry, draught-proof house, a yard with or without a roof and a variation of trough types. Independent access to each house gives maximum isolation, but an arrangement of swing gate pen divisions affords greater trough space and the labour-saving method of "through-the-pens" dunging out.

Insulated G.P. Piggery with Dunging Passes (*Fig. IV*). This piggery is based on the traditional Scandinavian plan, but has many modifications in detail and section, particularly in so far as the screened off dunging passages are concerned. This is done in an effort to reduce the cubic capacity of the building requiring to be heated by the pigs and also to cut off the freely ventilated damp dung passes from the warm pen areas. Simplified as far as management is concerned, the inter-pen isolation is reduced by the use of "through" dunging passages.

Craibstone All-Purpose Piggery (*Fig. V*). While the "carry-through" type of pen is ideal in many ways it is uneconomical in housing space as the pigs at the weaning age of eight weeks occupy the same pen as they will at bacon-weight. This house has been designed as a compromise between the ideal and economy in housing outlay. The design affords warmth, isolation and access to fresh air and sunlight for the sow and litter and also the "weaners" while providing equable environmental conditions on labour-saving lines for the feeding pigs at a stage when former requirements perhaps are not so vital. Each unit comprises three pens with outside runs and two feeding pens. Two sows can farrow their litters in the pens designed for this purpose and the litters, if healthy, can be mixed at their seventh week prior to being placed in the weaners' pen at eight weeks of age for a period of one month. For the month prior to their occupation of the pen it would have accommodated two in-pig sows awaiting access to the farrowing pens vacated by the weaners. At twelve weeks the weaners would be divided into two even pens of eight and placed in the feeding pens. Thus, at any stage this relatively limited accommo-



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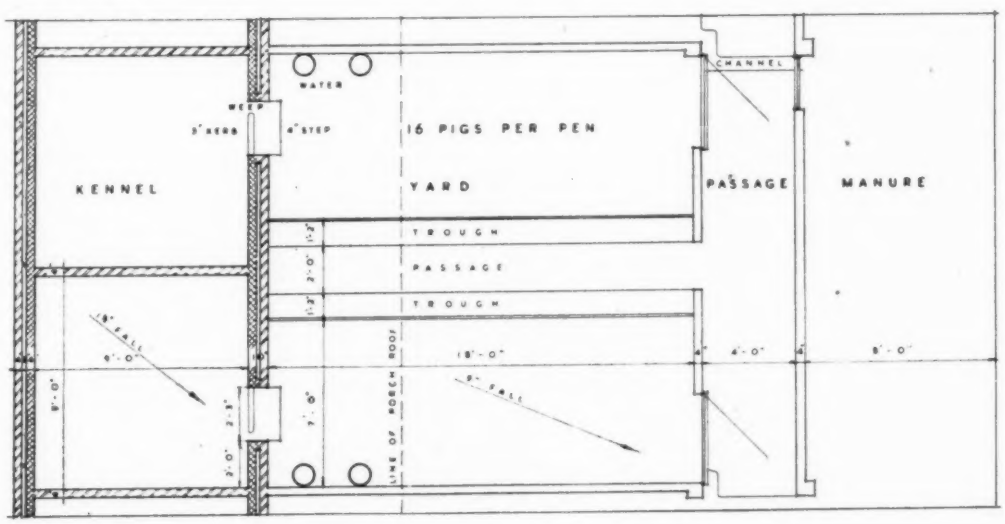


PLAN

SIMPLE FEEDING PIGGERY : 16 PIGS PER PEN

DOTTED LINES INDICATE DEVELOPMENT OF ROOF

Fig. VI. (See page 734.)

dation would be housing fifty head of stock under satisfactory economical conditions.

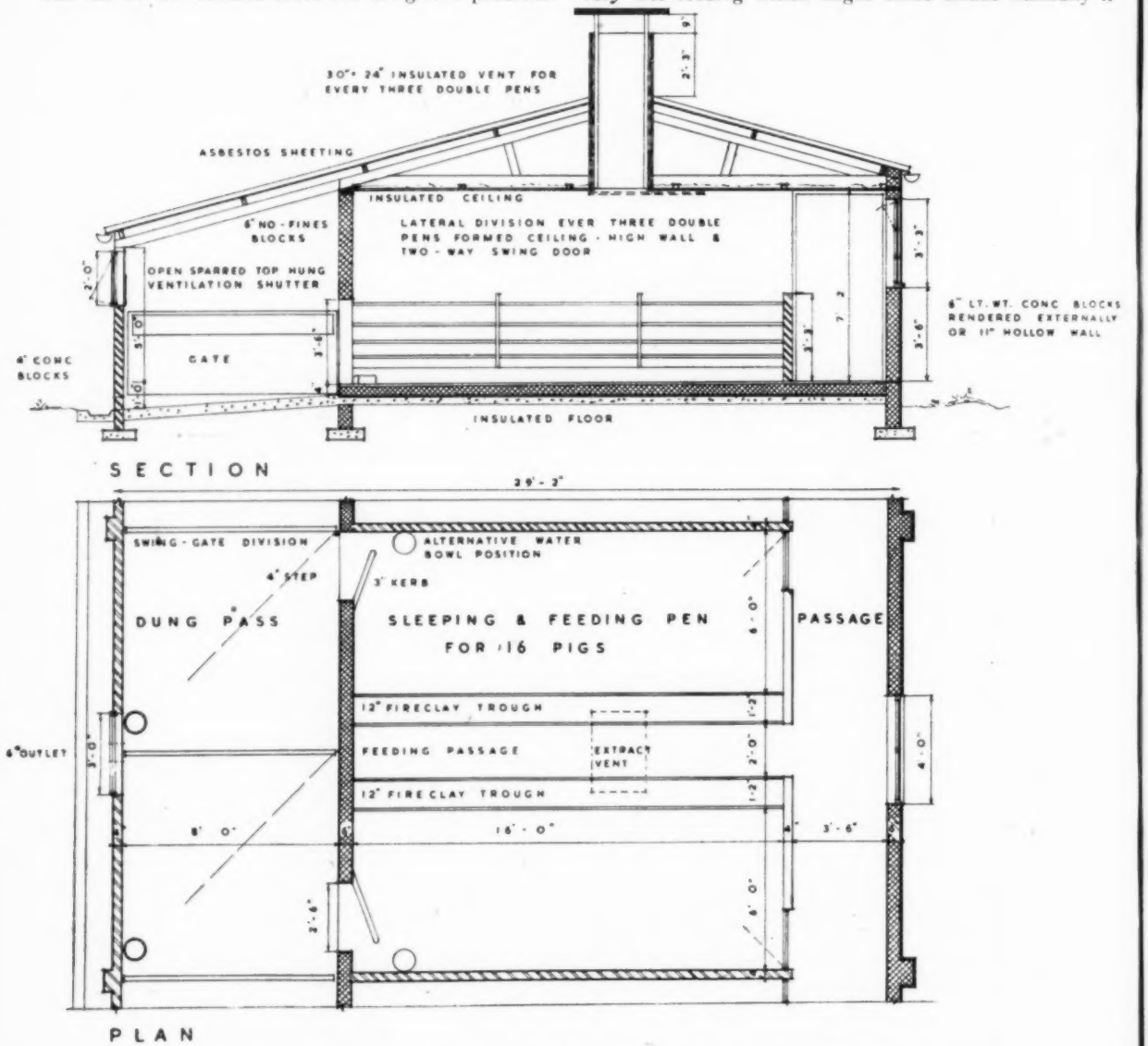
Feeding Houses

It is generally recognised that the maximum thriftiness in bacon pigs is achieved when they are run in relatively small numbers, say eight to ten, whether as selected groups or as complete litters, and any of the General Purpose Pens previously described would be satisfactory for this purpose. In large-scale production, however, the general practice is to forfeit the efficiency achieved in feeding small groups in favour of the reduced capital outlay and labour costs made possible by keeping pigs in larger groups of sixteen upwards to thirty, although the former number might be taken as the most satisfactory compromise.

The use of self-feeders eases the designer's problems by not having to provide 12ins. to 14ins. of trough space per pig, but due to fluctuations in the feeding supply situation and the difficulty in producing top quality bacon pigs by unrestricted feeding, it is perhaps unwise to plan solely for self-feeders, especially at the "finishing" stage. "Weaners" and "stores," however, may well be fed this way.

Large capacity pens of pigs never all reach bacon-weight at the same age and therefore it is advisable to plan some extra "side" pens for the slower growers, as the mixing of pigs, especially when in an advanced state, is disastrous to the live-weight gain factor.

Simple Feeding Piggery (*Fig. VI*). This is perhaps the most simple type of large capacity pen and, especially when fully roofed over, forms an economical and satisfactory unit. It is especially suitable for swill or other very wet feeding which might cause undue humidity if



HENDERSON FEEDING PIGGERY

Fig. VII. (See page 735.)

fed within a warm insulated house. A light screen wall to enclose the whole house would further enhance conditions and reduce the effect of climatic variations.

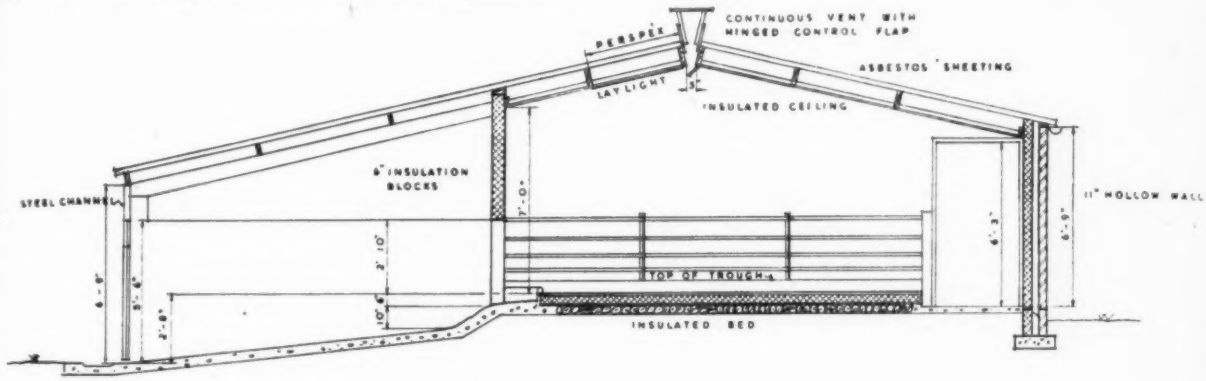
The Henderson Feeding Piggery (*Fig. VII*). This house, designed to hold 16 pigs per pen, provides an insulated warm bedded area where the pigs feed and sleep while having access to a screened-off, freely ventilated dunging pass. This wide dung pass has full width inter-pen gates so as to facilitate cleaning, which may be by mechanical means if desired. While failing to provide the benefits of inter-pen isolation it is an easily managed unit which can be maintained at an equable interior temperature even on exposed sites.

Deep Dung Feeding House (*Fig. VIII*). Again a house of McGuckian influence, this type may be described as the original, but with a fully roofed outside yard for the accumulation of dung, from whence it can be mechanically removed at intervals of two months or so.

Conclusions

The suggestions made in this paper are based mainly on observations on and developments of commercial piggeries. There appears to be a dearth of dependable information as to the optimum environmental conditions required by the pig, while the value of such factors as inter-pen isolation, access to direct fresh air and sunlight, and many other points require investigation and assessment based on controlled experiment. Such work will take a considerable time and therefore requires immediate attention.

In the absence of reliable scientific data pig producers, by trial and error methods, have produced a number of designs of pig housing which are proving their merit under commercial conditions. The optimum environmental conditions likely to be arrived at by scientific research and those conditions considered economically satisfactory by the practical farmer may differ to a considerable degree and, furthermore, as the desired scientific information may take a considerable time to obtain, it is suggested that sufficient knowledge has been derived from commercial sources to warrant the erection of demonstration houses which would illustrate the husbandry influences and the design and structural elements involved. At the very least there should be formed a centre for the collection, assessment and dissemination of what information there is presently available at the various centres in the country.



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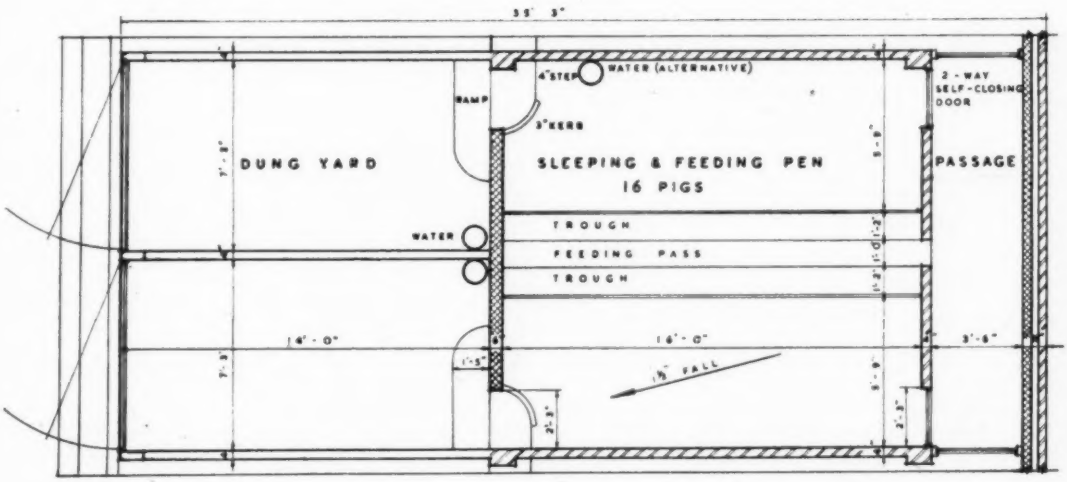

PLAN

DEEP DUNG PIGGERY

Fig. VIII.

Summary

Very little information which has been derived from scientific research is available as a guide to the optimum environmental conditions required by the pig. Most of the development work of recent years has been based on the observations of commercial producers who are continually endeavouring to increase the efficiency of production within their own units.

Pigs appear to thrive best when housed under conditions which will give them a dry bed in warm surroundings with ample fresh air and separate dunging areas. While inter-pen isolation appears to be an essential factor in the housing of sows and litters this is not deemed so essential where feeding pigs are concerned. Economy in labour and capital outlay largely depends on the careful planning of the pig unit as a whole and on the detailed design of pens and their fittings and their inter-relation.

Houses which incorporate many of the desired factors for the thriftiness of the pig, as well as those assisting in economy in labour and capital outlay, have now been built and are proving that the extra care in design and construction is amply repaid.

In view of the admitted importance of good housing in the economic production of pigs, steps should be taken to instigate the necessary scientific research on the optimum environmental conditions required by the pig. Pending such findings pig houses might be erected to demonstrate and test the value of houses designed from practical observations. At the very least there should be formed a centre for the collection, assessment and dissemination of what information there is presently available at the various centres throughout the country.

Discussion

Mr. D. F. Oliver, B.Sc., M.R.C.V.S. (Grantham), who was the first opener of the discussion, said: I am sure we are all indebted to Mr. Soutar for his most excellent paper and the wealth of information he has given us; it is bound to lead to an animated discussion on so topical and controversial a subject.

I would like to endorse his plea for experimental work to be carried out to determine the optimum conditions of environment for the pig. It is very interesting to observe that in an experiment conducted in a permanent piggery during last winter, Mr. D. W. Sainsbury, of the Royal Veterinary College, found that when the ventilation was deliberately restricted to less than five changes per hour, the amount of food necessary per lb. of live-weight gain jumped from just over 2¼ lb. to between 9 and 10 lb.

There is also a wide field of research on the subject of the lighting of permanent buildings. Apart from the involvement of heat losses, unsuitable siting of windows may lead, during periods of strong direct sunlight, to overheating of the building and to excessive glare and heat on the pigs. Furthermore, whilst the English Farm Buildings Committee Report puts the roof lighting requirements at 50 square inches per pig, Rosenburg puts the figure at 108 square inches and other German authorities differ from both.

In this country there are, broadly speaking, two types of pig-keeper. The first group contains the specialists and the second group ranges from the general farmer to the smallholder. The former keeps pigs running into the thousands, the latter probably from 400 to 500 head downwards, depending on how the pig fits in with the general scheme of running the farm and the economics of pig production at the time.

Mr. Soutar has introduced the word economy into the title of his paper—a very important word. I wonder if he would tell us the cost of building the types of permanent piggeries which he has described.

In his book "Pigs," V. C. Fishwick, lately head of the Pig Husbandry Research Station, South-Eastern Agricultural College, University of London, states: "In June, 1948, building costs are very high. Some farrowing pens which are being erected on my farm will cost about £60 each, and a Danish fattening house is costing about £60 a pen. They are especially designed to meet post-war conditions and a great deal of thought was given to economy of construction, and in my opinion the cost was reduced to the absolute minimum that is consistent with efficiency."

I do not know if Mr. Soutar will agree with these figures, but it seems to me that whilst such capital cost may be justified in the case of the pig specialist, the policy of the second group of pig-keepers should be to adapt existing buildings where possible, or to use arks.

In the process of adaptation the general principles for maintaining the health of the pigs should be followed as laid down in the paper. For example, loose-boxes can be made into excellent farrowing and fattening boxes. They are generally well constructed, with thick, warm walls, free from draughts, and with little condensation of moisture. It may be necessary to re-lay the floor with insulated concrete, and provide an external outflow. This, and the provision of a sleeping kennel of the type suggested by Dr. Lamont, is easily accomplished. Stables, too, can be adapted in a similar manner.

A farrowing crate may be incorporated if desired, but it appears to me that its main advantage—that of controlling the irritable, restless sow—is far outweighed by its disadvantages, not the least of which is the capital cost involved. Since it is considered to be no longer economical to winter feed cattle in courts and crewyards, these buildings, too, can be utilised. Either a false roof, or a series of huts or kennels may be constructed in them by means of straw bales. A warm, dry, draught-proof shelter will result. I know that straw bales are often condemned as harbourers of vermin, but if in the warm weather period they are dusted about once a month with either gammexane or DDT at the junction of bale and floor where pigs are most prone to lie, then there will be little trouble from fleas or lice.

Not only is the maximum use being made of materials and labour available on the farm, but, should circumstances change whereby the farmer decreases his pig herd or relinquishes it altogether, then his buildings are available for use by other types of livestock and capital depreciation is held at a minimum.

As a generalisation one can say that breeding pigs and young store pigs are better kept out of doors, whilst feeding pigs should be inside. The exposure to sunlight, variations in temperature, continual breathing of fresh air, all play an important part in establishing and maintaining health and constitution. To be efficient breeding pigs must have a long hard-working life and pass on certain important qualities to their offspring. Consequently they should not have their constitution impaired by too intensive shelter from the elements. On the other hand, it does not matter if any such qualities are lost in protecting a fattening pig from the cold, since it will be slaughtered before fully grown, anyway. Even in the coldest wettest parts of the country it is possible to run pigs out for at least six months of the year.

I would like briefly to describe to you my experience in a herd run on such lines. It consists of about 30 breeding sows, and young pigs and fatteners up to about 350 head, running on a general farm situated about 400 feet above sea-level on limestone land. The breeding sows and litters are kept in arks on the tether system. These and the young pigs up to 14 weeks old are run over a four-year-old ley during its last year prior to ploughing up. The young pigs are sheltered in temporary houses made of straw bales. From here they are transferred to crewyards for final fattening, and go to the bacon factory at six months. During the last nine years—it may be even longer, but I have only been in Grantham nine years—there has been no outbreak of disease of any kind, not even the bad winter of 1947 could induce the odd case of pneumonia or enteritis.

Unfortunately such a system involves extra time and labour: the equivalent of about one day a week is spent in moving the arks, carting food and water to the field. Fold runs attached to the arks are preferred by some, since they provide extra shelter from inclement weather, although by grouping arks together, additional shelter may be obtained if desired. The disadvantage of the weekly movement of farrowing huts or arks

can be avoided by the provision of small paddocks of some 200 to 300 square yards per unit. This area is of sufficient size to accommodate the sow and litter for the eight-week period to weaning.

I am of the opinion that, in the construction of pig houses, the provision of a warm, dry, draught-proof floor is the most important of the environmental factors affecting pigs. The young pig, being physically immature, does not possess the insulating covering of fat which the adult pig enjoys. It must be remembered, too, that the smoothness and levelness of the surface of the pig's body is such that when it lies down a large proportion of its body comes into close contact with the floor. This is in marked contrast to the horse or cow, which, on lying down, is always raised to a certain extent on its many bony protuberances.

The development of the clay aggregate for incorporation in concrete is very useful in improving the insulation of floors and walls but I am inclined to disagree with Mr. Soutar's remarks about the electrically heated floors. Whilst they may not compare so favourably with the lamp in either price or utility for providing heat for the litter of pigs, I think that there may well be a great future for them in fattening pens—in permanent houses, at any rate. The initial cost of plant and installation at about £12 may seem high, but once installed, they last indefinitely and are very economical to run. Moreover they compare very favourably with the Scandinavian system, under which, in many of their fattening houses, quite elaborate systems for conducting heated air are installed, or pipes containing hot water are passed through the pens. Their principle is that it is cheaper to provide heat in this way and so save on food consumption and reduce the amount of respiratory troubles. Such systems require careful control to achieve their aim and the more complicated the control the greater the risk of human error. Not only is the electrically heated floor free from this human defect but it also provides the heat where it is wanted—on the floor. The saving of bedding, too, is important, especially in those parts of the country where straw is in short supply.

Mr. Soutar's recommendation for a steep fall of 1 in 15 to the floor is two to three times greater than that generally advocated but has much to commend it, especially in the Scandinavian type of house where all the excreta is passed inside. It will lead to a marked reduction in the humidity of the atmosphere. This reduction in humidity in a piggery is of considerable importance —a high humidity may seriously impair the pig's ability to thrive and renders it more susceptible to virus pneumonia. Moreover, dry materials are less conductive than damp and consequently anything which reduces dampness in walls, roofs, or floors will assist insulation. It may well be that this is the factor which causes some farms to fail in rearing their pigs in the winter, although their results are quite successful during the summer.

However, the disposal of this liquid leads to a further problem. In theory this valuable product should be stored in a liquid manure tank and emptied as necessary. Unfortunately it is not always convenient to do this at the right time and a trail of sludge and a powerfully strong growth of nettles and flies in the vicinity are all too common. Therefore it would seem better to use the design of building which will allow litter to be left on the ground for some two to three months in an external yard, so that urine is absorbed by it.

In all the types of piggery described by Mr. Soutar the roofs are of the span type, but I have wondered whether the monitor roof may not be an advantage to the specialist farrowing house, where it is not possible to run litters out of doors. I have not had any experience of such roofs and I would be very interested to hear the essayist's views on its value or otherwise and its cost of construction.

In conclusion, I would like to thank Mr. Soutar not only for all the trouble he has taken in preparing this paper, but also in arranging the demonstration of pig housing for us this afternoon—a demonstration to which I, for one, am looking forward with keen interest.

Dr. D. Luke, B.Sc., M.R.C.V.S. (Belfast), who was the second opener of the discussion, said: As a native of Northern Ireland it is very pleasing for me to observe the tributes which Mr. Soutar has paid to the pioneer work done in that country on pig housing and its relation to health by the late A. A. McGuckian. He rightly pays tribute, too, to the work of our veterinary colleagues Lamont and Shanks, who were so closely associated with Mr. McGuckian in the early work on what has now come to be called the McGuckian system. It should not be forgotten, however, that the hut system of pig keeping was evolved in the first place by Dr. Waldeman in Germany. In Northern Ireland Professor Lamont continues to take a very active interest in this important aspect of pig husbandry and at present Mr. Gordon and myself are carrying out extended observations on the effect of environment on the welfare of the pig.

The importance of the physical environment and its effect on the welfare of the pig should need no emphasis in a gathering such as this. The gospel of "keep them warm" has been preached widely in recent years. Suffice it to say that it is not the epidemic diseases of swine that are the most important source of losses on pig farms in Northern Ireland but rather is it the sporadic deaths due to what we call non-specific disease that determine profit and loss for the average pig farmer. There is no doubt, too, that this non-specific mortality can be much reduced by keeping pigs warm and dry. Even the effects of some conditions such as virus pneumonia are much minimised where affected pigs are maintained under good housing conditions. Indeed, by the combination of good housing and judicious management virus pneumonia can be eliminated altogether.

Mr. Soutar has presented his specialised knowledge of building construction as applied to pig housing in a very lucid manner and he has made an admirable survey of present-day standards for pig houses. He rightly emphasises our lack of precise information on many of the basic requirements of the pig, but I think that the dimensions he gives for various types of houses and components are, in the light of present knowledge, reasonable "approximations" as he puts it. I am sure, too, that his helpful plans for various types of housing incorporating these dimensions will prove of value to all members who may be asked to advise on the building of new piggeries.

Not every farmer who is interested in pig keeping is prepared to undertake the costly erection of a new building and we are more often asked to advise regarding the conversion of an existing building or on the improvement of a piggery that has proved unsatisfactory in practice. Much of what Mr. Soutar has to say regarding the construction of new buildings can of course be applied to the conversion of existing houses and indeed many unsatisfactory pig houses can be converted with comparatively little structural alteration and expense. The provision of a well-insulated floor area is probably the most important alteration to an old type piggery that will add to the comfort of the pigs therein. By thus providing a properly insulated bed, pigs lie more comfortably and the indiscriminate soiling of the floor with faeces and urine, so often a feature of non-insulated floors, ceases and these natural functions are performed away from the bed area. Such an alteration to the floors together with the provision of a false roof over the bedded area may be all that is required in many instances to improve the prospects of profit from the pigs. I have in mind one particular instance where the adoption of these measures reduced mortality to one-sixth its previous total.

The comfort of pigs can be materially increased in buildings with excessive air space by the provision of a suitable "house" within the existing house. Fig. 1 shows an example of a successful conversion for sows and litters. Essentially it is a semi-detached type of ark placed inside an existing house which is otherwise most unsuitable for rearing young pigs. Inside and outside walls are of corrugated iron with a 4-inch space between, which is filled with a suitable insulating material. The floor consists of cement flagstones laid on dwarf walls, thus providing an insulating blanket of still air below the floor. Along the sloping side of the house is placed a "sleeping creep" which provides additional heat for the piglets and also affords them protection from the sow. As in the case of the ordinary field ark, outlet ventilation appears to be unnecessary. Fig. 2 gives details of the type of sleeping creep which we find very suitable. The uprights are of angle iron and the roof is in the form of a lid which facilitates cleaning.

Fig. 3 shows a suitable conversion unit for older pigs. It has the same basic construction as that shown in Fig. 1, but it is modified in size and shape to suit older pigs. This particular unit provides a floor space of about 40 square feet and is suitable for 12 to 15 pigs about 10 to 14 weeks old or about 10 bacon pigs. It is about 4 feet high and additional ventilation is provided by a shaft from the roof of the inner house. This shaft is fitted with a sliding control panel and sacking over the door affords an additional means of conserving heat in cold weather. The floor space of such units can be varied to suit existing requirements. Fig. 4 shows another view of the same unit.

In Fig. 5* is reproduced a thermograph and hydrograph reading showing changes in temperature and humidity over one week in June inside the unit featured in Fig. 2. Temperature ranged from 67° to 81° F.—a range of 14°. Relative humidity fluctuated from 42 to 65 per cent.—a difference of 23 per cent. During the period represented by the upright lines the house was empty when the temperature fell and the relative humidity rose sharply. By way of contrast the graphs in Fig. 6* were recorded in the outer house during the same period. Here the temperature varied between 55° and 75°—a range of 20°—while the relative humidity fluctuated between 48 and 88 per cent. The mean temperature in the inner house was 74° while in the outer building it was 65°. All recordings were made at floor level. These figures do indicate the ameliorating influence of the inner house and it may be anticipated that in mid-winter the contrast will be even more marked.

These conversions can be carried out relatively cheaply and without the aid of much skilled labour and, embodying as they do many of the principles laid down in this paper, they very materially add to the well-being of the pig and consequently to the profit of the farmer.

There is still no adequate substitute for outdoor rearing and where possible it should be encouraged. A suitable rearing ark is shown in Fig. 7. This is a McGuckian type ark and will probably be familiar to many of you. It embodies the usual insulated walls and roof with a wooden floor. It has a sleeping

* Shown on the screen, but unsuitable for reproduction here.—*Editor.*

Fig. 1.—Semi-detached type of ark conversion units for sows and litters. Inner and outer walls of corrugated iron are 4 inches apart and space is packed with insulated material. Floor is made of concrete flagstones laid on dwarf walls.

Fig. 2.—A suitable sleeping creep. Front supports are of angle iron and the roof is in the form of a lid (open in illustration) which facilitates cleaning.

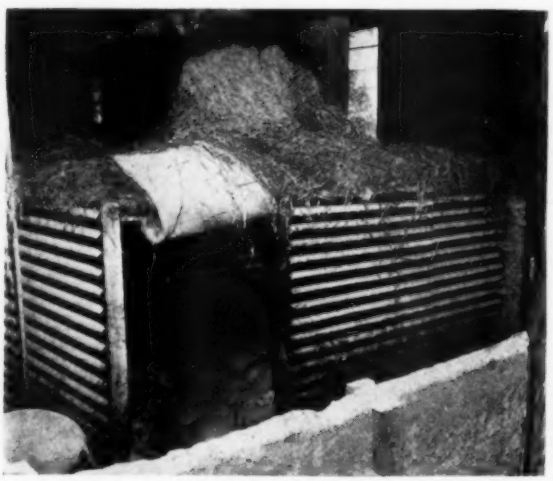

Fig. 3.—Conversion unit to suit older pigs. Construction similar to that shown in Fig. 1. Note ventilation shaft extending from roof of unit. Sacking over door is down in cold weather.

Fig. 4.—Another view of same unit as in Fig. 3.

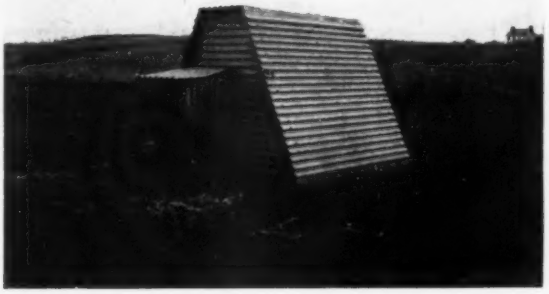

Fig. 7.—McGuckian type rearing ark with detachable porch providing additional protection during cold weather. Walls and roof insulated and it has a wooden floor.

Fig. 8.—Rectangular hut (Campbell type) of simple construction. Walls double and roof follows contour of dotted line, thus affording protection and extra warmth for the young pigs.

creep for the young piglets. In Fig. 8 is shown another type of ark which has been developed by Mr. Campbell, of Bushmills. This is comparatively simple in structure and can be made from standard corrugated iron sheets with a minimum of cutting. Its outside measurements are 8 feet by 6 feet. The entrance is placed to one side and the inner roof slopes as shown. The space between the inner and outer walls is packed with insulating material and the slope of the inner wall provides protection for the piglets; as a result of its shape there is a deep blanket of insulation over the area where the young pigs lie.

Mr. Soutar rightly stresses the importance of excluding dampness as far as possible from the house area and points to the value of outside runs in achieving this. Many people now consider that the needs of the pig can best be met by providing a well-insulated house with an outside run attached, and there is no doubt that such houses do function well, especially in cold weather. Practically everything that has been said so far has dealt with the conservation of heat but there are occasions, albeit few in number under the climatic conditions of the British Isles, when the pig finds some difficulty in getting rid of heat when housed in an insulated building. We have seen outbreaks of pneumonia in such houses not during the cold weather of winter but during very warm spells particularly in late summer, when evening temperatures may be high and there is little air movement. Under such conditions pigs prefer to lie in the outside run and if, as may happen, there is a sharp drop in the early morning temperature we find in such circumstances that pneumonia is a common sequel.

This points to the need for additional controlled ventilation in such houses during warm weather. It is probably advisable, too, to reduce the number of pigs in such houses during the warmer months of the year. Ventilation is, of course, a notoriously difficult subject and it is virtually impossible to ventilate a building on paper alone. However, it does seem essential to have some form of controlled ventilation which can be varied to suit the different climatic conditions met with during the changing seasons. If such is provided it then becomes part of the art of the herdsman to know when to manipulate the ventilators. This introduces the human element more than is desirable and I would welcome Mr. Soutar's view on this point.

General Discussion

Mr. I. Lucas (Rowett Institute): Though not a member of the Association he had one comment which he would like permission to make as it might be of use to others. During the previous winter the Institute had kept pigs on two different scales of energy intake. Some pigs were kept on a very high energy intake, and others on a very low energy intake. Also, some of each group were kept in a good house, and some of each group in a bad house. The good house was kept at a temperature of about 60° F. and the bad one at about 40° F. Of the pigs having a high energy intake, those in the bad house grew just as well as, if not better than, those in the good house. Of the pigs having a low energy intake, those kept in the bad house grew very much slower than those in the good house.

He would be the last person to suggest that a cold house for pigs was all right, but in view of the comments that had been made about the need for experiments in pig housing he would suggest that if people compared pigs on a high scale of energy intake it would be found that their housing made very little difference. It was far better to limit the level of energy intake in order to find the true evaluation of good and bad housing.

Dr. W. P. Blount (London): Mr. Soutar and the openers of the discussion were to be congratulated. He supported Mr. Lucas very strongly. At Stoke Mandeville, where litter tests had been run for four years, it had been found that results were very satisfactory indeed when the pigs had free access to food although they were in what would be classed by some as "bad" housing. By "bad" housing was meant huts which were uninsulated and which had no ventilation in the ordinary sense, no windows, no electric light and no electric heating. Those huts, which would not necessarily suit the north of Scotland, had produced the following results: a mortality of less than 1½ per cent. (generally about ¾ per cent.) in pigs of from 9 or 10 weeks of age up to fattening to 210 lb. The pigs went to the bacon factory at an average age of six months, though many went before. The average gain per pig per day was about 1½ lb. The temperature had varied from 26° to 91° F.

There was a distinct though slight difference in results between the summer and winter tests. The difference 0·2 per cent. feed conversion represented something like 25 lb. of food, which was obviously worth considering if one could afford insulation. After carrying out some insulation experiments it had been found that the cheapest and most efficient form of insulation would cost approximately £10 a house. If pigs were given a high energy ration, or adequate feeding, the necessity for specialised pig housing could be offset.

Mr. A. L. Walther (Liverpool): With regard to pens, could some idea of costs be given?

Mr. A. J. Wright (Macclesfield): He wished to thank Mr. Soutar and the openers of the discussion for their excellent contributions. On the question of artificial heating of piggeries, many people to-day seemed to go over to mechanical electric heating to overcome their troubles without first considering the most important principle, *i.e.*, the reduction of air space. They had, in his opinion, to be careful about recommending this artificial heating as both reduction of air space and no draughts were vital factors. Electric heating had been introduced in many piggeries in his area, as well as small creeps with infra-red lamps. Owners had thought this would solve their problems, but it had not. In some cases there had been heavier losses of piglets owing to great variations in temperature in the small creep and in the remainder of the sty where they had to suckle.

Would Mr. Soutar give an indication of what he considered to be a suitable and cheap insulating flooring? Some kinds were very expensive for the ordinary farmer.

Mr. Lucas: What he had said a few minutes earlier was not meant to advocate non-improvement of housing for pigs. The high levels of energy intake he had referred to had been uneconomically high, and he had deliberately said nothing about disease and would not comment on the influence of good and bad houses on the health of pigs. The pigs in question had remained healthy because great trouble had been taken, but it was reasonable to assume that a high incidence of disease would be associated with poor housing. It was unlikely that bad housing could be offset economically by good nutrition.

The Reply

Mr. Soutar, in reply: The remarks of Mr. Oliver and Dr. Luke, as well as those of the other contributors, had been of the very greatest interest. It was at meetings when they could get together and describe different experiences and opinions that they could help each other to get somewhere.

It was a difficult problem to deal with the cost of pig housing because the matter affected individual farmers differently in every case. It was a good policy to encourage farmers to pick up materials cheaply and, where possible, to build the houses themselves. Such an approach was very different from the drawing up of comprehensive plans, the issuing of schedules, the acceptance of tenders from contractors, and the carrying out of the job in that manner. Roughly speaking, and assuming that eight bacon pigs equalled the housing of a sow and litter, the cottager type of piggery cost about £6 per pig; the kennel type within an uninsulated shell, such as a Nissen hut, cost from £8 to £10 per pig; and a fully insulated piggery cost about £10 or £12 per pig. A McGuckian type of house could not be built under approximately £12 per pig. One had to balance the advantages of an easily run house against the initial outlay. A farrowing unit such as the one which had been described would cost probably between £60 and £80 per pen.

Mr. Oliver's remarks about the necessary flexibility in pig housing were fully appreciated and the situation met by him in the South was exactly the same as that encountered in Scotland. Each case had to be assessed on its merits, and undoubtedly the ark system was one of the best for the tenant farmer, who could buy arks and expand or sell them. If one had existing buildings suitable for conversion, by all means let them be used. It would be useful if comparative trials with heated and unheated floors were carried out.

The monitor roof designs which Mr. Oliver mentioned had been publicised in America for a long time and they did allow sunlight to reach the back of the house. A deep dung house cheapened drainage. The great difficulty in the North-East was to get sufficient straw to contain the urine.

The question of excessive heat in summer had been touched upon, but that trouble did not worry Scotland very much. When the problem did arise emergency steps were taken. All the doors of the piggery could be kept open and the otherwise very faulty practice of watering the floors could be adopted—a measure which brought down the temperature very rapidly.

To secure ventilation it was a good thing to have evenly distributed baffle inlets with adjustable flaps which could be altered according to the season. It was helpful to have a single shaft for each cell of the building. By having a control flap on the shaft it was very easy to adjust the air flow in a piggery.

Members might have seen a recent article in the Press advising the use of a double-deck piggery, with a piggery on the ground floor and a deep litter poultry house above. This type of house employed the use of cross ventilation by means of hopper windows, but cross ventilation was really very dangerous and fluctuated far too much with local climatic conditions and the wind. It was better to have inlets open constantly and the air flow controlled by one central extract shaft.

It was interesting to note the outbreaks of pneumonia which occurred in the summer, usually in piggeries where the pigs were kept in large numbers per pen—16 and upwards. Probably it was often the result of bullying. The bullied pig was pushed out to sleep in the cold run. In this connection the practice of the Danes of insulating the floor of the dunging pass as well as of the actual sleeping bed should be noted.

With regard to Dr. Blount's housing at Stoke Mandeville, the success that was achieved there was quite remarkable in view of the temperatures given, but the unit was a very special one and very special pigs were received there.

DEMONSTRATIONS

Methods of Pig Housing

VISIT TO DUTHIE FARM AND CRAIBSTONE

The practical application, as it were, of the methods discussed in the above paper, "Pig Housing in Relation to Health," was forthcoming in the afternoon, when the arrangements made by the author, Mr. D. S. Soutar, for the demonstration (on Tuesday, September 8th) of methods of pig housing were carried splendidly to fruition with the co-operation of his colleagues in the enterprise. He had also been successful in enlisting that of the clerk of the weather, with the result that this sunny and finely organised visit to four centres of note, each with its characteristic features of interest, constituted something of a happy excursion, as well as an informative experience, for the 150 or so members and delegates who participated.

In brilliant sunshine the party gathered in Golden Square to board the four buses provided. A leaflet giving details of the itinerary and a short history of each place was handed to every member prior to departure. In order to cope with the numbers two buses took half of the party to the Duthie Farm of the Rowett Research Institute, going afterwards to the Farm Buildings Department of the North of Scotland College of Agriculture at Craibstone. The other half of the party went to Craibstone first and then to the Duthie Farm. Later at the time specified the whole party arrived at the pig farm of Messrs. Lawson at Goval, and afterwards proceeded to the bacon factory of Messrs. Lawson at Dyce.

At the Duthie Farm the parties were welcomed by Andrew Biggar, M.C., B.Sc., the manager of the farm, and, following a short description of the pig rearing unit, the members were free to inspect the arks and the pigs. As Mr. Biggar pointed out, the ark method of rearing pigs had been adopted 15 years before because of the indifferent health and poor performance of the breeding herd. From the very first, ark rearing throughout the year had proved successful and as time went on and with the co-operation of the farm buildings unit of the North of Scotland College, improved types of arks were introduced. All the various types of arks were still being used, the most recent being one with a curved roof of corrugated aluminium, insulated throughout, with baffled entrance, a rectangular "carried" run and inside creep feeding facilities. Apart from a curious outbreak of trouble amongst the young pigs in the summer of 1952, when several litters showed a combination of big liver disease and a disease closely resembling swayback in lambs, rearing troubles had been negligible in the unit of over 30 arks. Mr. Biggar informed the members that they

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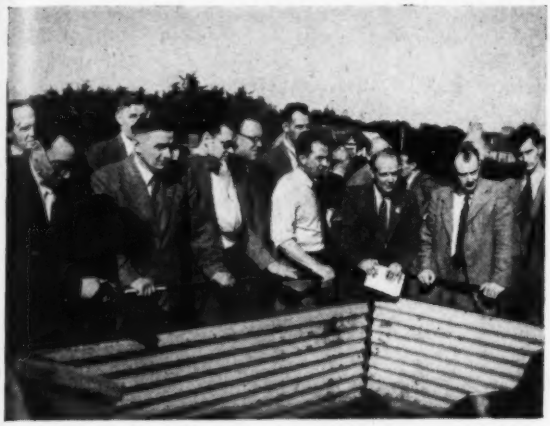
Perhaps the cheapest type of insulated flooring was "no-fines" concrete. The old flooring should be levelled off and heavy roofing felt put down. The concrete—one part of cement to eight parts of riddled cinders (obtainable from the gas works)—should then be laid. To overcome a very porous surface one should finish by applying a cement screed—three parts sand to one of cement.

The Chairman, in proposing a vote of thanks to Mr. Soutar, said they were indebted to him for the time and energy he had used in preparing the paper and the stimulating address he had given that morning. Similar thanks were extended to the openers of the discussion also. The good attendance of members at the meeting was an indication of the interest taken in this work and should be regarded as a tribute to those who had spoken.



Study in concentration at Craibstone.

were seeing the pigs at their best, since during the preceding few months the records showed that the average litter weaned was 8·1 with an average of 40·5 lb. per pig at weaning. At the time of the visit there were 28 litters averaging 9·5 pigs per litter. During the tour of inspection Mr. Biggar was plied with a continual stream of questions.

At Craibstone Mr. Soutar welcomed the parties and introduced them to his three assistants, Messrs. Harrison, Gerrie and Paterson, who took part in answering the numerous questions put to them about building materials and building construction. Inside the workshop were models of pig units, plans of pig units, pig housing equipment, numerous photographs, descriptive booklets and publications —indeed, all and everything associated with pig-house construction. The well-planned lay-out made it simple for everyone to carry out a detailed inspection. Outside were materials to demonstrate the different components of building construction, and Mr. Soutar gave a commentary on the advantages and disadvantages of the various materials. On demonstration, too, were the two latest rearing arks—the Craibstone Curved Roof Ark and the Craibstone Utility Ark. Numerous questions were put to the farm buildings officers and for many the demonstration was so interesting that they were loth to join the bus to continue the itinerary.

Mr. Frank Lawson, after a short address of welcome to the whole party when it arrived at Goval, introduced Mr. Q. M. Service, his veterinary practitioner, and asked him to give a short account of the various methods employed to control disease amongst the pigs. Mr. Service informed the members that routine vaccination against both swine fever and swine erysipelas was carried out and also routine dosing of the young pigs with iron to prevent anaemia since the pigs were reared entirely indoors. Apart from occasional cases of post-parturient fever the only major trouble was urticaria in recently weaned pigs for which various remedies had been tried without outstanding success. During the previous six weeks the practice of giving a bran mash only, to pigs from 10 to 16 weeks old, each Thursday afternoon and a bran mash with a dessertspoonful of Epsom salts per pig for their morning feed each Friday morning, appeared to have had a beneficial effect in preventing cases.

The party then broke up into small groups and visited the various units on the farm. The 115 sows are all farrowed in a special farrowing house where each pen embodies a farrowing crate with electric lamp heaters. After three to seven days in the farrowing crate the sow and litter are transferred to a pen with an outside run. Each pen is a separate unit with electric lamp heaters and suitably baffled entrance to cut out draughts. There the pigs are weaned and fattened, thus ensuring as little alteration in housing conditions as possible. Considerable interest was taken in the Swedish Landrace pigs which Messrs. Lawson have been breeding for four years, and which they are either breeding pure or crossing with their own Large White pigs. Messrs. Lawson, Alexander (farm manager), Soutar, Biggar, Service and Shanks, as well as the pig men in charge, were given a busy time answering enquiries.

The fourth and last phase of the programme was the mustering of the circulating groups at the premises of Messrs. R. Lawson & Sons, of Dyce, where the delicious products of the bacon factors were features of a most welcome tea, kindly provided by the management. It took some time to settle into their places the surely unexpectedly large contingent of invaders, but when all were in process of ample refreshment there still remained opportunity for the announced discussion, under the guidance of Mr. H. M. Wilson, of Cupar-Fife, who had at command a panel of experts in Mr. Alexander (Manager, Messrs. R. Lawson & Sons), Mr. Andrew Biggar (Farm Director, the Rowett Research Institute), Mr. D. S. Soutar (reader of the paper to Congress), Mr. Peter L. Shanks (V.I.O., North of Scotland College of Agriculture) and Mr. Q. M. Service (Mr. Lawson's practitioner).

Following is a summary, in the form of question and answer, of the quick-fire exchanges which followed in the limited time at disposal:—

Q.—Has it been found that the Landrace and first cross Landrace pigs are in fact longer than other breeds, and is there any relation between length and the number of ribs?

A.—The Landrace and Landrace Cross give a longer back to a side of bacon. It cannot be said that the number of ribs exceeds that present in the Large White.

Q.—Is the Landrace a quicker-maturing pig and does it kill out better?

A.—Our records show that the Landrace can go to the factory at 210 lb. killing out weight at an average of somewhere about 198 days for a whole litter. The pure Landrace is far ahead of either the cross or the pure Large White, in our case, at any rate. In our opinion, the calculation of loss percentage from live to dead weight is a sheer waste of time.

Q.—Do mortality figures for pigs kept at these centres indicate the principal causes of loss?

A.—Sows and litters are taken out of the farrowing houses at 3 to 10 days and the loss of piglets after a period of four months is approximately 10·5 per cent.; the number of pigs weaned (taken at random) is something like 9·3 per cent., births averaging 11·6 per pig.

The cause of mortality is, in some cases, over-laying, more particularly by the heaviest sows, but the main losses are due to weak pigs at birth.

Q.—Do you have much trouble with mange?

A.—No; if pigs show signs of skin trouble we put it down to urticaria, having taken the precaution to send scrapings to Mr. Shanks, who invariably returns them negative to mange.

Q.—How long have you been vaccinating pigs against swine fever with crystal violet vaccine and has there been

any breakdown in vaccination or trouble from sterility?

A.—We have been using the crystal violet vaccine for three years and have had neither breakdowns nor any ill effects. So far we have had no swine fever: there has been no trouble from sterility.

Q.—Could we be told something about big liver disease?

A.—It occurs in pigs between 10 and 16 weeks old and in very good condition. There are acute and subacute or chronic forms. In the first form death occurs suddenly, and in such cases fairly obvious pumping of the heart may be seen. Subacute cases may last for from 10 to 15 days. Many of these cases die but some may survive. Pigs that survive fatten eventually. At *post-mortem* examination the obvious finding is a big liver—four or five times the normal size—and associated with that is a very enlarged, rounded heart and an enlarged spleen. In the subacute cases pleurisy and pericardis are clearly evidenced. In the cases that survive the only finding is an exceptionally enlarged liver. We have no idea as to the cause. Some cases may occur on a farm and none afterwards. As to treatment, injections of liver extract and the administration of sulphate of iron have yielded a fair amount of success.

Q.—Do you use earth or iron by mouth or by injection for anaemia in piglets, and if you have tried the latter but discontinued its use, what is the reason?

A.—We just dose with iron and cobalt by mouth at the 5th, 12th and 21st days after birth.

Q.—What is your treatment for milk scours?

A.—We find that sulphamezathine soon clears that up.

Q.—In a large number of breeding sows such as we have seen this afternoon, is any trouble experienced due to sows losing their milk? Is it associated with oestrus and how do you deal with it in this part of the country?

A.—Some loss of milk has been noticed from three to five days after parturition and quite a lot of sows go off their milk for a spell, also post-parturient fever is common. Penicillin is helpful here and the milk usually comes on again with the use of pituitrin.

Q.—Have you had any trouble with metritis, also with mastitis (hard udder)?

A.—Hard udder is not necessarily mastitis; in fact, true mastitis is very seldom seen. It must be very unusual to see 10 to 12 quarters affected at one time. Hard udder affecting all the quarters is probably a condition resulting from milk fever, post-parturient fever, or some other illness and not connected in any way with true mastitis.

At this stage Mr. Wilson rose to say that it was with great regret that he had to bring the discussion to a close, for lack of further time. It only remained for him to ask them to pass a very hearty vote of thanks to all those responsible for what had been a very enjoyable—indeed, a memorable—afternoon, with special mention of Mr. Frank Lawson for his part in the arrangements, which represented a miracle of organisation.

The assembly having applauded with enthusiasm, Mr. Lawson assured them of his appreciation of that response. He had around him a very able and conscientious team—Mr. Soutar, Mr. Shanks and others—and he did hope they had found it helpful and beneficial to move around that afternoon: if so, that left them all very happy indeed. (Applause.)

VISIT TO THE ROWETT RESEARCH INSTITUTE

Some 70 to 80 members of the Congress paid a visit to the Rowett Research Institute on the afternoon of Friday, September 11th, by invitation of the Director, Dr. D. P. Cuthbertson. After their arrival the party was taken to see some of the identical twins which formed part of the experiment described to the Congress on the morning of that day by Mr. J. A. Crichton, Head of the Applied Nutrition Department. Various points of interest were explained to the party by Mr. Crichton and Mr. J. N. Aitken, who have worked with these animals since they were bought by the Institute as week-old calves.

Onset of first oestrus has been delayed by about three and a half months in the low-plane as compared with the high-plane animals but thereafter fertility was unaffected. There has been no significant difference in the birth weights of the calves from twins fed high and low levels of nutrition. In this connection it should be noted that all low-plane animals were " steamed up " during the last two months before parturition, when foetal development is most rapid.

Substantial differences in bodyweights and measurements were obtained between high- and low-plane animals during the first 18 months, but these tended to disappear by three and a half years of age. It appears unlikely that under-nutrition of the order imposed in the early stages will seriously affect mature body size.

Calves were on view demonstrating the four treatments of rearing from birth until placed in the dairy herd under commercial conditions.

Rowett demonstration on monozygous twins.

The party was then split into four groups and taken in turn to four demonstrations by four departments of the Institute.

Demonstration 1

Dr. Margaret I. Chalmers, Miss Sheena Marshall and Dr. R. L. M. Synge (Department of Protein and Carbohydrate Chemistry) exhibited data from experiments with sheep done during the past seven years (*J. agric. Sci.*, in press), showing that the production of ammonia in the rumen differs for different proteins fed, and that losses to the animal resulting from absorption of this ammonia can be reflected in nitrogen-balance and growth results. Such effects are likely to be more prominent during milk production, and accordingly experiments on the metabolism of different proteins by lactating goats and cows are now in progress. A metabolism cage designed for use with lactating goats was exhibited.

DEMONSTRATION 2

Dr. J. M. NAFTALIN (Pathology Department) showed lantern slides illustrating the work he was doing in collaboration with Mr. G. H. Cushnie on bracken poisoning in cattle. The gross morbid anatomy was that of a haemorrhagic disease and was investigated from this point of view. Examination of the blood showed marked thrombocytopenia and leucopenia, and terminally absence of polymorphs. The prothrombin time was normal. These findings pointed to a bone marrow lesion. The terminal pathology was explicable on this basis. In adult cattle the rise in temperature was associated with bacteraemia and with an increased severity of bleeding. Lesions in the organs were illustrated to show the type of bleeding associated with thrombocytopenia and with infarction due to bacterial masses in liver and kidney.

The administration parenterally of either vitamin B_1 alone or together with other members of the B group of vitamins from the beginning of feeding with bracken did not prevent the bone-marrow damage. The possible cause of the disease was discussed. Further work is in progress.

Dr. W. A. GREIG (Pathology Department) gave a short account of his work on the anaemia induced in mice by excessive feeding of calcium carbonate and on the effect of high calcium/low phosphorus rations on their breeding performance.

In breeding mice fed on a diet consisting of whole wheat 66 per cent., whole dried milk 33 per cent., and sodium chloride 1 per cent., the addition to the diet of calcium carbonate at the rate of 1 or 2 per cent. was found to impair the reproductive performance, particularly the rearing performance. *Post-mortem* examination of the offspring of mated pairs on the supplemented diet showed that the hearts were enlarged, the thymus glands were diminished in size, and the livers were pale and greasy. Further investigations revealed that both the dams and their young were affected with hypochromic microcytic anaemia, and that the lesion in the liver was a severe fatty metamorphosis, the increased lipid material being laid down first of all in the centre of the liver lobules. The weanlings were also hyperlipaemic, and some carried excessively large deposits of fat in the dorsal subcutaneous region. It seems highly probable that this derangement in lipid metabolism was entirely secondary to the anaemia, and was caused by deficient oxidation of fat in the liver as the result of a reduction in the oxygen-carrying capacity of the blood.

The administration of 10 p.p.m. of iron, as ferric citrate or ferrous sulphate, was found to prevent the development of all these abnormalities, but supplements of other substances whose deficiency may cause hypochromic microcytic anaemia—copper and pyridoxin, for example—had no effect.

A supplement of calcium carbonate at the rate of 2 per cent. widens the Ca : P ratio of this diet from about 0·7 : 1 to about 2·2 : 1; but although one of the factors governing iron absorption is often stated to be the Ca : P ratio, restoration of the original ratio by means of a supplement of sodium dihydrogen phosphate was practically without effect in preventing impaired rearing performance and the onset of anaemia in animals on the diet high in calcium carbonate.

The relationships between calcium, iron and phosphate in the diet of animals clearly require closer definition. There is ample published evidence that a high level of dietary phosphate will result in precipitation of iron, unless balanced by a comparable level of calcium; and now it has been shown that at least some calcium salts can render iron unavailable, whether an equivalent amount of phosphate is present or not: this property is certainly possessed by calcium carbonate, calcium chloride, and dicalcium phosphate. The mechanism of the action is not yet clear, but may be related to changes in the *p*H of the alimentary tract.

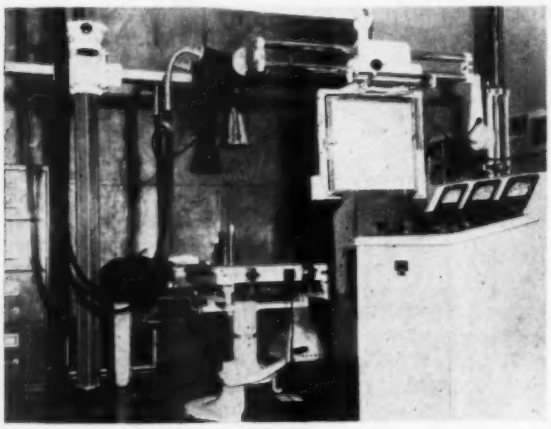
DEMONSTRATION 3

Mr. D. BENZIE, radiographer to the Institute, had an exhibition of X-ray plates to show the type of work of this nature that had been undertaken in the Institute. The visitors were shown radiographs of the skeleton of the sheep taken from ewes maintained on different levels of calcium and phosphorus intake. The work was done as a part of the experimental investigation of Dr. J. Duckworth, Head of the Applied Biochemistry Section, on the depletion and repair of the calcium reserves of the ewe during pregnancy

Members of the B.V.A. at the Rowett Institute.

and lactation. Plates were on view showing the living anatomy of the stomach of the adult Cheviot sheep after the ingestion of a barium meal and the rate at which this meal progresses through the alimentary tract. In addition, several plates of the stomach, duodenum and intestines of younger sheep and of kid goats were on view, together with the results of various techniques under development to study the portal system of various species.

The parties were able to see the equipment and lay-out of the whole unit.



The Radiographic Apparatus.

Demonstration 4

The use of cannulae which can be inserted into the rumen, the abomasum and duodenum was demonstrated by Dr. A. T. Phillipson (Physiology Department). These techniques are used in the Institute for collecting and examining the contents of the rumen, abomasum and duodenum, for feeding directly into the abomasum, or for the introduction of protein into the duodenum. The rumen fistula technique is used by the microbiologists and chemists for collecting rumen micro-organisms or for examining the microflora present when different foodstuffs are fed. The particular use demonstrated was the recording of the movements of the rumen, reticulum and abomasum of sheep and the effects of various drugs, such as acetylcholine, carbaminoylcholine, eserine, atropine and adrenalin upon these movements.

Miss M. J. Masson (Physiology Department) demonstrated the use of phase-contrast microscopy and ultra-violet light microscopy as tools for studying the micro-organisms of the alimentary tract and the relationships between bacteria and food fragments. She illustrated her demonstration by plates of rumen and other micro-organisms taken by these methods. Miss Masson spent some months recently with Mr. Smiles, of the Medical Research Council at Mill Hill, during which the ultra-violet light exposures were made. These methods have four principal uses : they allow gross changes in the balance of the population to be recognised quickly; they reveal the physical relations between the organism and the food particle; combined with histochemical methods they provide some appreciation of the nature of the changes produced in the particles of food themselves; and, finally, they reveal far greater detail of the structure of the micro-organisms themselves than can be obtained by the use of direct light microscopy. Miss Masson's work is the continuation of the work of the late Mr. Frank Baker.

Following the demonstrations the company were hospitably entertained to tea in the fine, beautifully panelled hall of the Strathcona Club. After tea Mr. Benzie showed part of the X-ray cinematograph film which he has recently been able to make (by the courtesy of Professor G. A. G. Mitchell) in the Department of Anatomy of the University of Manchester. The film demonstrated that the technique can produce results which promise to be valuable in understanding the mechanism of the transfer of food from the reticulum to the omasum and abomasum.

At the end of the proceedings the retiring President, Mr. A. M. Graham, expressed the gratitude of the party to Dr. Cuthbertson and to the members of the staff concerned with the demonstrations. It was a great experience for the B.V.A. members to look round such a centre of research and they were very greatly indebted to those who had afforded them such a pleasant and instructive afternoon and dispensed such hospitality. In reply, Dr. A. T. Phillipson, Deputy Director, said how glad the Institute was to receive a visit from the British Veterinary Association, for the veterinary profession formed an active body in the field concerned with maintaining animal health. The study of nutrition also played an important part in maintaining the health of our livestock so that the work of the profession and the Institute should dove-tail.

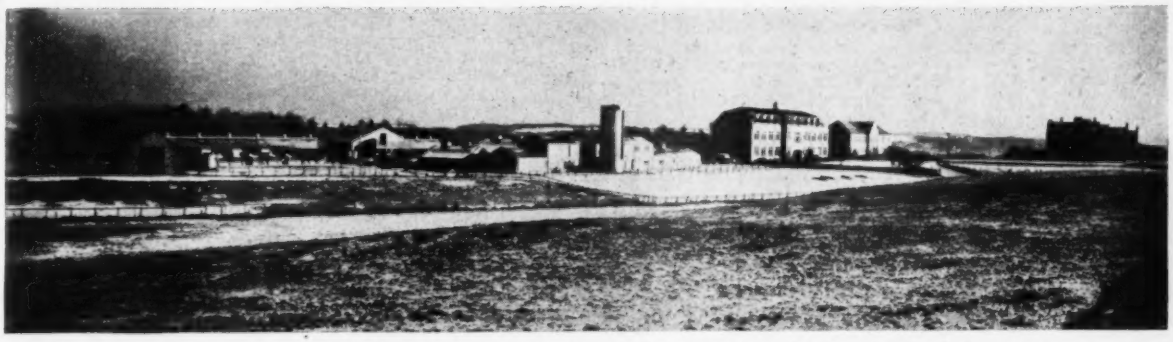
The Dining Hall in the Strathcona Club (where tea was served to the visiting group).

The Rowett Research Institute

The origin of the Rowett Research Institute dates from 1912, when the Development Commission and the Scottish Education Department proposed the establishment in Scotland of an Institute for Research in Animal Nutrition, to be supervised by a Joint Committee representing the North of Scotland College of Agriculture and the University of Aberdeen. The first scientist appointed by the Committee was Dr. J. B. Orr—now Lord Boyd-Orr—who commenced work in April, 1914, in temporary accommodation in Marischal College, Aberdeen.

Before long, the embryo Institute was transferred to premises at Craibstone; but it was not until 1922 that, through the generosity of the late Dr. John Quiller Rowett, it became installed in its own permanent buildings, and thereafter became known as the Rowett Research Institute.

From this time until the outbreak of war in 1939 the Institute continued to prosper, and soon achieved world-



THE ROWETT RESEARCH INSTITUTE. From left to right: part of the Duthie Experimental Stock Farm steading; the experimental piggery; animal houses and metabolism rooms; the main laboratory block; the Reid Library building; and (in shadow) Strathcona House.

wide renown—principally for its fundamental work on the mineral metabolism and requirements of farm animals. During this period it acquired the Duthie Experimental Stock Farm, which extends to over 500 acres, through a benefaction to commemorate the late William Duthie, of Collynie, a world-famous breeder of beef Shorthorns. Another acquisition of inestimable value was the Reid Library, established and developed with funds provided by another of the Institute's great benefactors, the late Dr. Walter A. Reid.

With the outbreak of war, however, the activities of the Institute had to be drastically curtailed, and indeed, became strictly confined to research upon problems of immediate concern to the war effort and the national economy. In 1945 the first Director—Sir John Boyd-Orr as he then was—retired and was succeeded by the present Director, Dr. D. P. Cuthbertson. Under his influence and guidance the

Photo: Colin Tait, 10, Bedford Square, W.C.1.

D. P. CUTHBERTSON, M.D., D.SC., F.R.S.E.,
Director of the Institute.

post-war phase of reconstruction and expansion on a large scale has been proceeding rapidly. The laboratories, animal houses, and ancillary services have been greatly extended in both size and scope, and the staff has been more than trebled in number; at present, there are about 65 scientists supported by over 100 lay assistants of all classes.

The expansion has been designed to focus on the field of animal nutrition a wide range of scientific skills and disciplines. Thus there are physiologists, biochemists, microbiologists, pathologists, parasitologists, radiologists, statisticians, physicists, engineers and animal husbandmen, each with his own abilities and his own specialised interests, but all pooling their respective contributions towards the solution of the main broad problems which the Institute has set itself out to resolve. Much of the work is necessarily fundamental in character, and highly specialised, but the practical applications of these findings are not forgotten; indeed, two of the largest Departments—those of Applied Nutrition and Applied Biochemistry—are almost wholly concerned with defined problems in the practical feeding of farm animals.

In addition to further laboratories now under construction the present buildings include the main laboratory block, to which a third floor was recently added, and which also contains special accommodation for ancillary work such as operative surgery, radiography, photography, and work with both stable and radioactive isotopes; cold storage rooms; a Kjeldahl house; heat-insulated accommodation for small experimental animals; *post-mortem* rooms; a modern experimental piggery and a modern experimental sheep-house; a large covered block for the housing of further experimental farm animals, including those undergoing metabolism experiments; the Duthie farm-steading; the Library and administrative offices; and Strathcona House. The Library building also houses the Commonwealth Bureau of Animal Nutrition which, amongst other valuable functions, publishes *Nutrition Abstracts and Reviews*, a quarterly journal providing abstracts of all important papers published throughout the world in the field of animal nutrition and an authoritative review on some aspect of this broad subject. Strathcona House, named after Lord Strathcona, who contributed about half the capital cost of its erection in 1933, is a residential club serving as a cultural and collegiate centre for the Institute; its 24 bedrooms provide living accommodation for research workers, especially those from overseas, and there is also a spacious dining-hall and a common-room.

The organisation of the Institute's activities into groupings is shown in the following Guide, which also indicates the main topics at present under investigation.

Guide to Experiments

PROTEIN AND CARBOHYDRATE CHEMISTRY (Dr. R. L. M. Synge, F.R.S.)

Studies of protein utilisation in the lactating goat, and ammonia production in the rumen in relation thereto. Milk yield experiments with cows. (Especially grass conservation products, fish and oil-seed products.) (Dr. M. I. Chalmers, Miss S. B. Marshall, Dr. R. L. M. Synge and Mr. J. C Wood.)

Micro-organisms responsible for rumen fermentations—chemical and serological aids in identification of—(especially protein and starch-splitting organisms). (Dr. P. N. Hobson.)

Nature of non-protein nitrogenous substances in grass, etc. (Dr. R. L. M. Synge and Mr. J. C. Wood.)

Service for determination of stable and radioactive isotopes for general work of Institute. (Dr. E. I. McDougall and Mr. A. Forbes.)

Studies of antibodies in colostrum and serum of sheep. (Dr. E. I. McDougall.)

Studies of degradation of starches in rumen and of starch-like polysaccharides of rumen micro-organisms. (Dr. P. N. Hobson.)

Studies of degradation of soluble grass carbohydrates in rumen. (Dr. P. C. Arni.)

Application of electrokinetic ultra-filtration and of continuous electrophoresis to fractionation of polysaccharides, their digestion products and other materials for general work of Institute as required. (Dr. R. L. M. Synge and Dr. D. L. Mould.)

Studies of proteolytic micro-organisms and proteolysis in the rumen. (Mr. A. C. I. Warner.)

MICROBIOLOGY (Dr. A. E. Oxford)

The function of protozoa in the digestive tract of grazing animals. (Miss J. Eadie.)

Isolation of singie cells of micro-organisms, particularly small protozoa and large bacteria, of importance in rumen fermentations. (Dr. A. E. Oxford, Miss F. Masson and Miss E. Mackay.)

The protozoan fermentation of non-cellulose polysaccharides in the sheep's rumen. (Dr. J. W. Porteous.)

Enumeration and identification by viable count, of rumen bacteria active in fermenting various natural carbohydrate substrates. (Dr. A. E. Oxford, Mr. S. O. Mann and Miss F. Masson.)

A study of capsulation in rumen bacteria by serological and other methods. (Miss E. Mackay.)

Cytology of non-protozoan rumen micro-organisms. (Dr. J. C. Appleby.)

Effect of feeding aureomycin on the development of the rumen microflora of calves. (Dr. A. E. Oxford, Dr. J. C. Appleby and Miss F. Masson; and Metabolic Dept.)

Nature and metabolism of mammary gland lipids and phospholipids. (Dr. G. A. Garton.)

ENZYMOLOGY (Dr. G. A. Levvy)

Cellulase activity in the rumen. (Dr. G. Halliwell.)

β-Glucosidase (cellobiase) activity in the rumen. (Dr. J. Conchie.)

Glucuronide-decomposing enzymes in the alimentary tract of ruminants. (Dr. C. A. Marsh.)

Isolation and study of simple plant glucuronides. (Dr. C. A. Marsh, Dr. G. A. Levvy and Mr. J. T. Worgan.)

Further studies of specificities of β-glucuronidases. (Dr. G. A. Levvy, Dr. C. A. Marsh and Mr. J. T. Worgan.)

PHYSIOLOGY (Dr. A. T. Phillipson)

The portal blood flow and the nutrients contained in it. (Dr. A. T. Phillipson, Mr. L. E. Vowles and Miss M. M. Wilson.)

The metabolism of short-chain fatty acids by rumen epithelia and other tissues, in particular the intermediary metabolism of propionate. (Dr. R. J. Pennington and Dr. T. M. Sutherland.)

The properties of the rumen epithelium regarding transport of inorganic and other ions. (Dr. A. T. Phillipson and Mr. A. Dobson.)

A study of the effect of adrenalectomy in sheep. (Dr. A. T. Phillipson, Mr. J. V. Evans, Mr. L. E. Vowles and Miss M. M. Wilson.)

The microbiology of the caeca of the chicken. (Miss M. J. Masson.)

The vitamin B_1 content of the rumen digesta. (Dr. A. T. Phillipson and Mr. R. S. Reid.)

The physiology of rumination in sheep. (Mr. J. G. Gordon.)

Psychro-Energetics Section

Construction of a gradient layer calorimeter and the study of the energy lost as heat by young suckling pigs. (Dr. J. D. Pullar.)

Radiology Section

General assistance to projects of other sections. (Mr. D. Benzie.)

Work on bone and teeth of sheep in relation to diet, pregnancy and lactation. Work on vitamin D assay of sheep livers. (Mr. D. Benzie, with Dr. J. Duckworth.)

Studies on the movement of the stomach and large intestine of small ruminants. (Mr. D. Benzie, with Dr. A. T. Phillipson.)

DIRECTOR'S UNIT (Dr. D. P. Cuthbertson)

The course of absorption of nitrogenous and energy-yielding nutrients throughout the alimentary tract of farm animals. (Dr. D. P. Cuthbertson, Miss R. M. Campbell and Miss G. M. E. Sharp.)

Non-dietary factors affecting the metabolism of protein. (Dr. D. P. Cuthbertson, Miss R. M. Campbell and Miss G. M. E. Sharp.)

PATHOLOGY (Dr. J. M. Naftalin.)

Nutritional liver necrosis of rats. (Dr. J. M. Naftalin.)

Bracken poisoning (pathology). (Dr. J. M. Naftalin and Mr. G. Cushnie.)

Vitamin B deficiencies and bone marrow structure in rats. (Dr. J. M. Naftalin and Mr. G. Cushnie.)

Institute Histology and Pathology. (Dr. J. M. Naftalin and Dr. W. A. Greig.)

Effect of cold on pig's liver. (Dr. J. M. Naftalin.)

Pathology and haematology of Mr. Crichton's twin calf experiment. (Dr. W. A. Greig.)

Calcium interactions with iron and other minerals in nutrition in mice and pigs. (Dr. W. A. Greig.)

Haematology of leukaemia in poultry. (Dr. W. A. Greig.)

Studies in enterotoxaemia of sheep. (Dr. W. A. Greig.)

A study of massive oedema (exudative diathesis) in chicks; testing of different types of diets and fractions of cod-liver oils. (Dr. J. M. Naftalin.)

Nutrition and resistance to infection. (Dr. W. A. Greig.)

HELMINTHOLOGY (Mr. G. C. Hunter)

Effect of nutrition on nematode infestations in mice and other rodents. (Mr. G. C. Hunter.)

Experiments directed to find suitable *in vitro* culture media for intestinal nematodes. (Mr. G. C. Hunter.)

Institute parasitology. (Mr. G. C. Hunter.)

APPLIED BIOCHEMISTRY (Dr. J. Duckworth)

Analytical Section

Provision of analytical services for the Institute. (Dr. J. Davidson.)

The development of new analytical methods, including those for carcase analysis. (Dr. J. Davidson.)

Studies of the utilisation of dietary energy by poultry, pigs and sheep. (Dr. J. Davidson, Dr. K. J. Carpenter, Miss K. M. Clegg, Dr. J. Duckworth and Dr. D. M. Walker.)

Studies of the reliability of plant chromogens as markers in digestibility experiments. (Dr. J. Davidson.)

Protein and Vitamin Section

Studies of the requirements of pigs and poultry for energy, amino-acids and vitamins during growth and reproduction. (Dr. K. J. Carpenter, Miss K. M. Clegg, Dr. J. Duckworth, Dr. G. Ellinger and Mr. D. H. Shrimpton.)

The evaluation of feeding-stuffs as sources of energy, amino-acids and vitamins, and the influence of processing methods on their nutritive value. (Dr. K. J. Carpenter, Miss K. M. Clegg, Dr. J. Duckworth, Dr. G. Ellinger and Mr. D. H. Shrimpton.)

The development of chemical and microbiological methods of assay for amino-acids and vitamins. (Dr. K. J. Carpenter, Dr. G. Ellinger and Mr. D. H. Shrimpton.)

The study of the economical use of home-produced feeds for pigs under different methods of husbandry. (Dr. K. J. Carpenter and Dr. J. Duckworth.)

Energy and Mineral Section

Studies of factors affecting the digestibility of feeds and their provision of gross digestible energy. (Dr. J. Duckworth, Mr. McLaren and Dr. D. M. Walker.)

The growth and resorption of bones of sheep under field and laboratory conditions. (Dr. J. Duckworth, Dr. R. Hill and Dr. D. M. Walker.)

Radiological and histological studies of the dentition of sheep under field and laboratory conditions. (Dr. J. Duckworth, Dr. R. Hill and Dr. D. M. Walker.)

Studies of the vitamin D reserves of sheep. (Miss B. W. Simpson.)

The study of copper metabolism in the ruminant. (Mr. C. F. Mills.)

The availability of organo-metallic complexes of copper in feeding-stuffs and in normal and "swayback" herbages. (Mr. C. F. Mills.)

APPLIED NUTRITION (Mr. J. A. Crichton)

Cattle

The effects of varying planes of nutrition during the rearing period on the growth, yield and health of dairy cattle. (Mr. J. A. Crichton, Mr. J. N. Aitken and Mr. A. M. Forbes.)

The effects of the plane of nutrition on the butter-fat and solids not fat in milk. (Mr. J. A. Crichton, Mr. J. N. Aitken and Mr. A. M. Forbes.)

The effect of the plane of nutrition of the dam on the growth rate of the offspring. (Mr. J. A. Crichton.)

Feeding value of silage and other fodders for beef production. (Mr. J. A. Crichton and Mr. J. N. Aitken.)

Grassland Utilisation

Further studies on the effects of high protein pasture on the performance of ruminant animals. (Mr. J. L. Corbett, Mr. J. Clemson and Miss E. Clarke.)

Continuation of the investigation into the possibilities and effects of the winter grazing of dairy stock. (Mr. J. L. Corbett and Mr. J. Clemson.)

The measurement of herbage intake by grazing animals—technique. (Mr. J. L. Corbett.)

Pigs

The interaction of environment and season with nutrition in determining growth rates of bacon pigs. (Mr. I. A. McK. Lucas and Mr. A. F. Calder.)

The interaction between type of pig and nutrition in determining carcase quality. (Mr. I. A. McK. Lucas and Mr. A. F. Calder.)

Investigations of optimal planes of nutrition using rations containing antibiotics. (Mr. I. A. McK. Lucas and Mr. A. F. Calder.)

Studies of the techniques of pig experimentation. (Mr. I. A. McK. Lucas and Mr. A. F. Calder.)

Studies of the nutrition and optimum environmental conditions for piglets reared on artificial milks. (Mr. H. Smith.)

Sheep

Further investigation of pregnancy toxaemia disease. (Mr. J. C. Gill and Mr. W. Thomson.)

Continuation of comparison of food conversion efficiency of the more common sheep breeds and crosses. (Mr. J. G. W. Jones and Mr. J. C. Gill.)

Study of fleece characteristics of ewes and lambs on varying nutritional planes. (Mr. W. Thomson and Mr. J. C. Gill.)

Effect on lamb growth of level of feeding of ewes over different periods before and after lambing. (Mr. J. C. Gill and Mr. W. Thomson.)

Metabolic Department (Mr. W. Thomson)

This acts mainly as a service department to meet the requirements of research workers in other departments.

Study of the weaning weight of lambs in relation to birth weight, sex and type of birth. (Mr. W. Thomson.)

Also see under *Sheep* experiments.

Duthie Experimental Stock Farm (Mr. W. A. Biggar)

The lands at the Duthie Farm extend to some 525 acres, 490 in occupation. The Farm acts essentially as a service department to meet the requirements of the research workers in other departments.

Statistics (Mr. A. W. Boyne)

Principally engaged in the design and analysis of experiments for other sections.

Development of design and sampling methods to economise in animals, material and work.

Development of new techniques to investigate specific problems arising out of the programme of other research workers. (Mr. A. W. Boyne and Mr. G. T. Park.)

Reid Library (Mr. W. L. Simpson)

The library serves the joint needs of the Institute and the associated Commonwealth Bureau of Animal Nutrition.

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Visit to Inverurie Slaughterhouse

One of the less publicised, but very interesting, outings during Congress week was made on Thursday, September 10th, when members visited Inverurie to see the first slaughterhouse in Scotland to be adapted for "line" slaughter.

Although the machinery was not working at the time of the visit, members were taken round the various operations stage by stage and invited to criticise the lay-out and methods being adopted.

There was keen discussion on a number of the innovations introduced by this method of slaughter, not the least being on the facilities provided for inspection of detained carcases.

Mr. C. J. Thomas, Area Slaughter Agent, Ministry of Food, was thanked for the demonstration, and members then adjourned to enjoy the hospitality of Mr. C. J. T. Ironside, M.R.C.V.S., Meat Inspector of the slaughterhouse.

CLINICAL DEMONSTRATION AT THE VETERINARY INVESTIGATION LABORATORY, CRAIBSTONE

On Friday afternoon over 80 members visited the V.I.O. laboratory situated a few miles outside Aberdeen at Mill of Craibstone. Mr. P. L. Shanks (V.I.O.) welcomed the visitors and introduced the various members of his staff. He outlined the history of the laboratory and described briefly the various items on show for the visitors.

The variety of the exhibits illustrated the range and scope of the work carried out at Craibstone. Cases of Johne's disease in a ewe and swayback in a lamb aroused much interest and discussion. There were *post-mortem* specimens of "big liver disease" in pigs as well as survivors of an outbreak of this condition. The latter were much under weight and poorly developed and showed clearly that apart from the losses due to death the economic value of survivors was much reduced. Also in the pig section were cases of urticaria and sarcoptic mange. Visitors were thus enabled to compare these two conditions which can give rise to some confusion in diagnosis in the field. Urticaria of the type shown is apparently common in the laboratory area and is almost invariably associated with *ad lib.* dry feeding. Two foster-mothers for rearing orphan piglets were in use. Both were equipped with infra-red lamps as a source of heat for the piglets and the temperature of the milk was thermostatically controlled.

Calves suffering from hypocuprosis were on view and an excellent film was shown, illustrating the clinical signs of muscular dystrophy (vitamin E deficiency) in calves. This film was of special interest in view of Dr. Blaxter's paper on this disease given earlier in the day. In the poultry section there were live specimens of osteopetrosis, and a young turkey showing the curled tongue condition. In this condition the top of the tongue is folded on itself dorsally and thus hinders the intake of food. The cause is unknown but it may have a genetical basis. On the *post-mortem* table there were specimens of round heart disease.

An excellent tea was much appreciated by all, and Mr. Hughes (Thurgarton) expressed thanks on behalf of the visitors to Mr. Shanks and his staff for the kindness shown and the trouble taken in setting up such an interesting clinical demonstration.

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Film Demonstrations

SMALL-ANIMAL SURGERY

Considerable interest was displayed in the showing by Dr. James S. A. Spreull, of Dundee, of three coloured films on small-animal surgery. They depicted the routine surgical procedure adopted by him in dealing with the following complaints in the dog:—

1. Fistula of the para anal sacs (anal glands).
2. Chronic otitis.
3. Persistent lameness resulting from damage to the medial meniscus of the stifle joint.

Excision of the anal glands was performed under spinal anaesthesia. Both the ruptured and the normal sacs were removed, the procedure being to cut down on to a probe which had been passed via the duct into the sac. The exposed sacs were dissected free and removed.

The aural resection films showed a variation of the operation demonstrated by Mr. Zepp, of New York. It was claimed that the altered technique simplified the operation.

Lameness resulting from damage to the medial meniscus

was described. The film showed the operation of opening the stifle joint and removing the meniscus.

Mr. H. F. Hebeler (Somerset), after congratulating Dr. Spreull, said that there had been at recent Congresses an increasing revelation of the excellent work carried out in cine-photography by practitioners. In the film on aural resection the slip of conchal cartilage which was freed was sutured to the lower quarter of the skin incision. Were any special precautions taken to avoid necrosis of the cartilage?

Dr. Spreull replied that the skin was not stripped from the cartilage. In stitching care was taken to ensure that the layer of the skin applied to the cartilage was approximated to the adjacent skin so that the cartilage was not exposed. The stitches included the outer layer of skin and the cartilage.

Mr. E. P. Barrett (Guildford) referred to excision of the meniscus, and said that in the human field a great deal of trouble was taken to protect the joint against blood. It was regarded as very serious if a blood clot formed in the joint. Had any difficulties been experienced by Dr. Spreull in this connection?

Dr. Spreull answered that with the human the whole limb was shaven two days before the operation. Also, the leg was bandaged and a tourniquet applied. He had tried using a tourniquet on a dog but, because of the awkward shape of a dog's leg, it tended to slip down on to the operation site, and one had to manage without it. Bleeding was very troublesome. He took no special precautions, but the joint cavity was not closed tightly. The animal was allowed to take some exercise and was not restricted in its movements in any way. Undoubtedly haemarthrosis occurred, but the condition never made the dog more lame than it was before the operation. Lameness was usually infinitely improved after a week or so. In some chronic cases it took a month before the dog walked properly, but he had had 100 per cent. success with the operation, and never an infected joint.

Mr. Jennings (Glasgow), in referring to the excision of anal sacs, asked if Dr. Spreull had ever filled the gland first of all with plaster of Paris or hard paraffin, which he used and found very useful for enucleating the sac.

Dr. Spreull replied that he had found the operation quite simple without doing so. The operation was completed within 20 minutes, and in his experience it did not take more than five or six minutes to remove one normal gland. It was difficult to imagine that it would be easier if the gland was filled with plaster. The probe was the guide, and plaster would no doubt serve the same purpose as the probe.

A vote of thanks to Dr. Spreull, proposed from the chair, was warmly accorded.

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Other Films

Mr. D. D. Ogilvie, B.Sc., M.R.C.V.S., entertained the large company who remained to see them after the discussion of Mr. Soutar's paper on Tuesday morning, with two films, of considerable interest in their widely differing spheres. Both were in colour and were produced by Imperial Chemical (Pharmaceuticals) Ltd.

The "Bahtim Story"

This film, to which a commentary and music have yet to be added, shows the recent development of veterinary services in Egypt and gives a graphic presentation of the process.

Animal disease has for long been a major handicap to agricultural progress there. Omar Draz, of the Egyptian Army Veterinary Corps, has pioneered the setting up of clinics in various parts of the country. The first of these is now in operation at Bahtim, near Cairo, and six other stations will open shortly. These will give the Egyptian farmer, for the first time, veterinary assistance in the treatment of sick animals.

Each centre is staffed by several veterinarians suitably equipped and provided with transport, and is responsible for the health of the livestock population of a wide area. Eventually it is planned to have 150 to 200 centres so as to cover the requirements of the whole country.

The authorities expect that through this work the veterinary profession will play a major part in the future prosperity of Egypt.

Gastric Secretion

This coloured film, made by Imperial Chemical Industries Ltd., in collaboration with the Department of Physiology, University of Liverpool, demonstrates the factors responsible for the secretion of the gastric juice. After an outline of the structure of the stomach, the surgical operation for the establishment of a Pavlov pouch in a dog is shown; after recovery from the operation, a meal is given and the secreted gastric juice is collected in fractions, thus illustrating the course of secretion in the normally innervated stomach.

Next the operation of oesophagostomy and of the insertion of a gastric cannula is shown on another dog; after recovery the animal is given a sham feed, the brief secretory response to which is fractionally collected. This represents the reflexly operated part of the secretory response.

On another dog a Heidenhain or denervated gastric pouch is made; when recovered, this animal is also fed, and the tardy but long-lasting secretion, which represents the response to the chemical factors of stimulation, is collected.

Thus it is shown that the normal response to a meal consists of the two fractions, a brisk but evanescent reflex phase, and following this, a slow but more protracted phase due to chemical excitants released from the pylorus and duodenum.

Finally, the gastric response, by secretion and movement, to distension of the stomach is shown by introducing a balloon into the stomach, and inflating it with air.

The President with Colonel Maurice W. Hale and Mr. W. J. B. Robson, Chairman of the Provisional Committee.

Ministry of Agriculture: Exhibit by the Veterinary Laboratory, Weybridge

THE JOHNE'S DISEASE STORY

In view both of the great range of the activities of the Ministry of Agriculture in combating disease, and also of the rapidity with which Johne's disease has achieved notoriety in the rôle of natural successor to tuberculosis as enemy number one to the well-being of the cattle of this country, and of others, we could but applaud the decision of Mr. Norman Hole, B.SC., M.R.C.V.S., to follow up his one-subject exhibit of last year—on swine fever—by adopting the same procedure at Aberdeen and devoting his display to a topic of equal concern to the profession, if not at the moment so much in the eye of the public and the lay Press.

By means of an ingenious arrangement of typescript panelling of his stand, relieved by effectively placed photographs and specimens, Mr. Hole contrived to relate a tale of such interest and importance that, without further ado, we reproduce it in full below—minus some of the illustrations—for the benefit both of those who were unable to attend Congress and of those who, perhaps intimidated by so much "wall reading" in the midst of the glittering distractions of instrument stands and the like, failed to achieve the degree of concentration demanded.

Here, then, is the Johne's disease story, as presented at the Congress by Weybridge:—

Foreword

(Photographs of two good-looking herds at grass ; one of these is badly affected with Johne's disease.)

Johne's disease is a very serious affection of cattle which has been allowed to spread unchecked ; our understanding of the condition is very little in advance of the knowledge of 40 years ago.

Britain is not alone in being affected ; the disease occurs extensively on the Continent, it is reported as being widespread in the United States, it occurs in Asia and is becoming serious in certain dairying areas in Australasia. It is virtually a world disease problem.

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It would appear that no areas of Britain are free ; until such time that the disease becomes notifiable maps are very misleading. They merely show there is a lot of Johne's disease widespread throughout the cattle population, but do not identify any one area as being more heavily infected than another. Numerous cases, however, have been confirmed recently from every county.

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Whether there is an increase in incidence or not the disease must be becoming more widespread ; the fact that an animal may carry infection for a considerable time without showing any symptoms has resulted in the unchecked distribution of infected animals. Although some attempts have been made in the past to use allergic tests to identify cases of preclinical infection, the evidence supporting the accuracy of such tests is really insufficient for us to assume that an animal passing the test is free from infection.

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The long and irregular period of incubation or latent infection before the development of obvious symptoms and rapid decline also tends to mask the serious depredations of Johne's disease ; a 5 per cent. loss over a year is not so spectacular as finding them all dead one morning, but the effect is little different. Cattle practitioners will agree that Johne's disease causes an enormous annual loss to the country of milk, meat, and money.

The disease is regarded by some people as simply one of bad husbandry and dirty conditions ; our experience is not in accord with this view. Bad conditions will certainly facilitate the spread, and the change from infection to clinical disease may ultimately prove to be connected with some finer point of husbandry, but we have encountered serious losses on some of the best farms.

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It is hardly necessary to demonstrate to practitioners the symptoms and lesions of clinical Johne's disease, nor can it be necessary to draw their attention to the serious effect this condition is exerting on the general well-being of the cattle industry and on production.

This demonstration, however, would be incomplete without reference to the salient features of the disease, well known as they may be.

Our object is to focus attention on Johne's disease, to put forward some of the aspects we know or believe to be true, and to indicate what assistance the laboratory can give to the practitioner in diagnosis and control.

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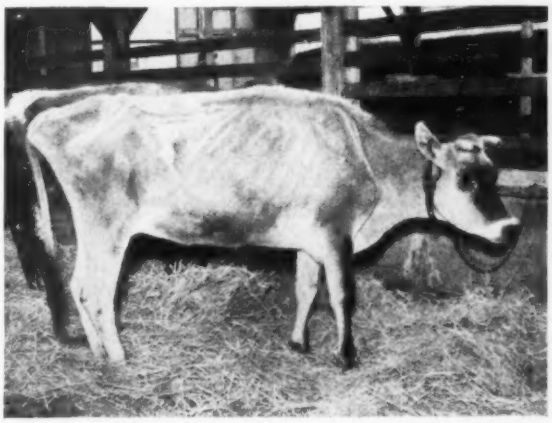
Clinical Disease

(Two *in vivo* photographs of clinical cases, one a Jersey cow and the other a Shorthorn heifer. One photograph illustrated here.)



A clinical case.

The name "Johne's Disease" is most commonly associated with the clinical form, but this is really only the terminal stage of a gradually built-up infection. When this clinical stage has been reached there is nothing that can be done for the affected animal ; it should be sent for slaughter immediately the infection has been established.

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Recognition of the clinical symptoms is really only important to enable a speedy diagnosis of the presence or probable presence of infection in a herd, and it is reasonable to say to-day that Johne's disease should be considered as a possibility in any case of diarrhoea and wasting in a mature bovine animal, and immediate steps should be taken to check the diagnosis by laboratory tests.

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Where there is no previous history of Johne's disease in a herd the importance of speedy diagnosis and removal of a clinical case cannot be over-emphasised, for there is little doubt such animals are the biggest source of infection for the herd as a whole. Delayed diagnosis occurred in one herd we

now have under experimental observation ; the first three or four cases were not recognised as Johne's disease and were treated on the farm until they died. As a result the stock and ground at this farm are now riddled with infection.

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Early symptoms we consider suggestive of impending clinical breakdown include an unexpected drop in milk production, retention of the winter coat (particularly in bulls), and a change in colour ; dark-red animals often become light red, and dark cream changes to pale cream.

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The final symptoms need little comment : persistent scouring of a watery motion, sometimes containing gas bubbles ; in our experience obvious blood in the faeces is uncommon. A marked and sometimes very rapid loss of flesh, a tightness of the skin and a stary dirty-looking coat. In some instances it is possible to check the scour by feeding or medicinal means, but it is almost invariably only a temporary effect. In a very few instances the loss of flesh occurs without scouring.

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The duration of the clinical disease is very variable ; some animals become emaciated wrecks in a few days, whilst others linger on persistently scouring for weeks or even months if not destroyed. We have known two cases of recovery from a severe clinical attack, but in general it is our experience that persistent scouring and loss of flesh in Johne's disease is almost invariably fatal, and it is far more economical, apart from controlling the spread of infection, to have clinical cases promptly destroyed.

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The clinical disease is commonly associated with the second or third calving, but we have seen plenty of clinical breakdowns at all stages of lactation, in old cows and in virgin heifers.

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Latent Disease

(Two *in vivo* photographs of animals in good bodily condition, positive to the blood test but showing no clinical symptoms, which were found on *post-mortem* to be carrying extensive lesions and very numerous organisms of Johne's disease. One photograph is reproduced here.)

A latent case, good condition. Blood positive. *Post-mortem* positive.

Whilst the clinical disease is universally known and recognised the occurrence of latent infection without any symptoms is not so generally appreciated.

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The clinical case is easily dealt with by immediate slaughter, a drastic but practical step which not only removes a dangerous source of infection but also appeals to the intelligent owner on economic grounds. The animal that is carrying a latent infection without symptoms, and is a possible source of future clinical cases in the herd, is a very much more difficult problem with which to deal.

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Even if we find our methods of identifying such animals to be reasonably accurate, owners are very loath to part with animals apparently in good health and in production, particularly if they are pedigree stock, even if the numbers involved make such a step practically possible.

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Yet these carriers of latent infection may well prove to be the crux of any attempt at eradication or control. They may well prove to be the cause of the frequent failures of attempts to eliminate Johne's disease by removing all clinical cases, applying hygienic measures and calf segregation.

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We have long known that the incubation period in this disease may be very protracted, but recently we have observed that animals of no particular age group may carry quite considerable lesions and very numerous Johne's organisms in the bowel mucosae and mesenteric lymph nodes without showing any ill-effects. It would appear almost certain that their dung at some stages, although of normal consistency, must be a source of infection.

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Some of these animals never appear to become clinical cases or to show symptoms of infection during their useful life ; others are notoriously bad doers, never producing quite the amount of milk or putting on the flesh expected of them, for no obvious reason.

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Such carriers of latent infection quite frequently react violently to a change of environment. We have seen numerous instances where adult animals have broken down into clinical cases shortly after purchase from a herd where the clinical disease is almost unknown.

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The work in progress at Weybridge has shown that the application of the complement fixation test to a herd does pick out a number of such latent infections ; whether it identifies them all is not yet certain, neither is the degree of non-specific reaction clear, but at present we consider the test to have a considerable practical accuracy.

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Ante-mortem Diagnosis by Examination of Faecal Smears

This has been the most commonly used method of confirming clinical diagnosis. It has no practical application unless the animal is scouring.

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A sample is taken and smears are made, stained by the Ziehl-Neelsen method, and examined for the presence of typical acid-fast organisms. Sometimes the method is varied by taking a pinch of mucous membrane from the rectum.

Acid-fast organisms other than the Johne's bacillus may be present in these smears, and a typical group is really necessary before a positive diagnosis can be made.

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A positive result to this test establishes infection, but a negative result does *not* establish the absence of infection. The dung of typical clinical cases confirmed later at *post-mortem* is quite often repeatedly negative. The average success from this test in positive cases is about 80 per cent.

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Ante-mortem Diagnosis by Allergic Tests

Until recently the only routine method applied to the diagnosis of preclinical infection with Johne's disease was an allergic test with either johnin or avian tuberculin. Weybridge is not in a position to criticise the value of johnin in this respect as we have very little experience of its use, but in the course of our work on complement fixation we have been able to compare our findings with routine avian tuberculin tests carried out under the Attested Herd Scheme. The details have not yet been classified, but although the position has not been fully assessed our preliminary findings suggest that the routine avian tuberculin test as carried out under the Attested Herd Scheme is of very little diagnostic value in identifying preclinical infection with Johne's disease. A large number of avian reactors have been found negative by the complement fixation test, and, as far as we know, have never shown any evidence of Johne's infection ; several animals, positive to complement fixation and later proved infected, have had no avian tuberculin reaction recorded against them in their test histories.

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We are quite certain that tuberculin is of no diagnostic value in a suspected clinical case.

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The results of other workers suggest that avian tuberculin given subcutaneously or intravenously may give better results. Neither of these methods has been tried at Weybridge because the time factor involved in recording temperatures makes them impractical for general use.

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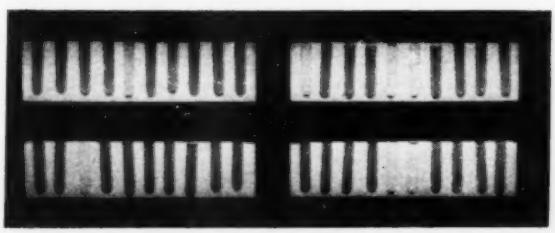
Ante-mortem Diagnosis by Blood Testing



A Complement Fixation Test on a Small Herd of 20 Animals. Each blood sample is tested in two dilutions, *i.e.*, two tubes represent one animal. The dark tubes are in actual fact clear red and the almost invisible ones colourless. Reading from the top left:
Animal 3 (tubes 5 and 6) is doubtful—partial haemolysis in first tube.
Animal 6 (tubes 11 and 12) and animal 12 (tubes 23 and 24) are positive—no haemolysis in first tube.
Animal 8 (tubes 15 and 16) and animal 18 (tubes 35 and 36) are strongly positive—no haemolysis in either tube.
The remaining 15 animals are negative.

A modified form of complement fixation testing is being studied at Weybridge with regard to its practical value for identifying preclinical or latent infection, and also for confirming diagnosis in suspected cases.

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Two or three cubic centimetres of whole blood are sent to Weybridge on the clot. It is important that samples are clearly identified and sent securely packed as soon as possible after the clot has formed ; delay results in haemolysis rendering the serum unsuitable for testing.

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At Weybridge the serum is separated from the sample and heat-treated to destroy the natural complement ; it is then mixed with an antigen of whole Johne's organisms suspended in saline. Any antibodies in the serum are adsorbed on to the antigen, which is separated out and resuspended in saline. Fresh complement is added to this serum-treated antigen, and is "fixed" if the organisms have adsorbed antibody from the serum. Fixation is determined by adding an indicator to the antigen complement mixture. This consists of sensitised red blood cells which become haemolysed in the presence of complement. The tubes are finally centrifuged and examined ; if the complement has remained "free" the red cells are haemolysed and the supernatant fluid is clear red, but if the complement has all been fixed the red cells are deposited whole and the supernatant remains colourless. Thus a red tube at the finish represents a negative result, and a colourless tube a positive result.

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Negatives and positives are clearly distinguishable, but as in all such tests there is a percentage of intermediate results which is difficult to classify, in which there has been partial fixation of the complement. These are classed as doubtfuls, and are as vexatious from the laboratory angle as they are to the clinician. Fresh samples taken later from such animals may turn up as negative, doubtful or positive, and we are therefore forced to use the term doubtful for such results.

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This work is part of a long-term experiment on Johne's disease, and veterinarians who use this test should understand that the findings are to some degree experimental. Our present assessment of the accuracy of this test may be summarised as follows :—

1. In suspected clinical disease it is very accurate ; about 95 per cent. of Johne's cases will give a positive blood test.

2. The value of the test as a guide to preclinical or latent infection is not so clear ; the data we have collected on this aspect are still very incomplete. We *do* know the test picks out a large number of animals that are infected without showing symptoms. We do *not* know whether all such animals are identified, neither do we know with certainty what percentage of non-specific reaction is given in such tests. Our present findings from a limited amount of material suggest a very promising practical value for the test.

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It must be emphasised these results are only applicable to herds free from bovine tuberculosis. There is a very marked cross reaction with tuberculous animals.

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Post-mortem Diagnosis by the Lesions

(Three photographs of different types of lesion seen at *post-mortem* surrounded by 10 preserved specimens in Perspex jars. One specimen showed the very different type of lesion seen in tuberculosis of the bowel with the typical discrete crater-like ulceration. One photograph reproduced here.)

Typical severe lesions in the ileum, valve and caecum.

The lesions seen at *post-mortem* vary very considerably. Although lesions have been described in the kidneys and elsewhere, as a general rule obvious lesions at least are confined to the bowel and mesenteric lymph nodes.

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We all know the typical text-book corrugation and "hose-pipe" bowel. This does occur in a percentage of cases, probably more often than not after protracted clinical disease, although we have seen such bowels in cases of latent infection.

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The absence of such corrugation, however, is not evidence of the absence of infection, nor does a severe clinical case necessarily show such lesions on *post-mortem* examination.

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Inflammation is another very variable factor. In our experience acute haemorrhagic change is not often associated with Johne's disease, but areas of chronic inflammation are sometimes seen, particularly in the mucous membrane round the ileo-caecal valve and in the rectum. Many infected bowels show no naked-eye haemorrhage at all.

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Inflammation of the lips of the ileo-caecal valve is frequently present in the absence of Johne's disease, and it may be connected with the shock of shooting.

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The most consistent lesion we recognise in the bowel is oedema of the mucous membrane, with or without corrugation. This swollen and cloudy appearance is characteristic, particularly in the terminal part of the ileum, round the valve itself, and in the proximal end of the caecum. The mucous membrane of the ileum frequently shows an unnatural opaque pale yellow colour.

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The terminal portion of the rectum is a favourite site for corrugation and chronic inflammation, but this is not a consistent lesion.

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The lymph nodes, when markedly infected, are oedematous and enlarged, and on section show an excess of creamy cortex. They are not haemorrhagic.

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In brief, although several types of lesion may be associated with Johne's disease, we do not recognise any as essential to the proof of infection. This depends on the microscopical examination of smears and sections, and possibly on culture.

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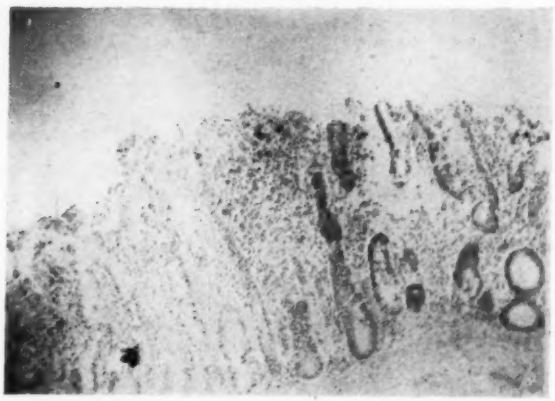
Post-mortem Diagnosis by Microscopical and Cultural Examination

(Six photomicrographs illustrating stages in the development of lesions in the mucous membrane of the bowel. One is shown here.* One photomicrograph of a bowel smear showing acid-fast organisms.)



* An early lesion in the mucous membrane.

The method upon which we place most reliance is the examination of smear preparations taken from the mucous membrane of the ileum, ileo-caecal valve and caecum, and from the adjacent lymphatic glands, stained by the Ziehl-Neelsen method.

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The staining reaction of the organisms does not appear to be affected by a considerable degree of autolysis, and since much of our material is several days old on receipt this is a great advantage. Although we feel we can recognise single organisms by their shape, size, and staining reaction we require a typical group for a positive diagnosis.

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The number of organisms present in such smears varies enormously, and is quite unrelated to the degree of macroscopic change in the tissues or to the clinical stage at which the animal was slaughtered. It sometimes proves very difficult to demonstrate organisms at all in the specimens with the most typical thickening and corrugation of the bowel, and conversely specimens which show the minimum of naked-eye alteration may show thousands of organisms and typical clumps in every smear.

We have on a number of occasions found lymph node smears to be positive when we have been unable to demonstrate organisms in bowel smears.

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When smears fail we resort to making histological preparations of the appropriate tissues. In a very few instances we have been able to demonstrate microscopical lesions and organisms in material from which negative smear preparations were obtained.

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The histological changes as well as the macroscopical picture seen in this disease are quite distinct from those of tuberculosis of the bowel, and vary from complete destruction of the glandular mucosae and invasion of the submucous tissues to minute localised foci of infection in the superficial parts of the mucous membrane ; giant cells are sometimes formed, more commonly in the smaller and presumably younger lesions. The demonstration of infection by cultural means is not a practical method of diagnosis for ordinary purposes, because it may take as long as three months for the organism to grow. In addition to this, the material we receive is often in an advanced stage of autolysis, which adds considerably to the complications of a normally difficult culture procedure.

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Interpretation and Application of *Ante-mortem* Diagnoses

When Johne's disease is suspected on clinical grounds a positive report on a faeces sample is definite evidence of infection, but a negative report does not eliminate Johne's disease. A positive blood report is equally definite, but a negative blood report should suggest further consideration of the case. In only a very few instances of suspected clinical disease where *post-mortem* material has come to our hands have we found evidence of Johne's disease in a blood-negative animal. In our experience avian tuberculin given intradermally is of no diagnostic value in the clinical disease.

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The testing of normal animals for preclinical or latent infection. Allergic tests can be used for this purpose. Although at Weybridge we have little experience of the use of johnin, avian tuberculin has been described by reputable workers in the past as being equally sensitive. In our experience the reaction of an animal to avian tuberculin injected intradermally is not a reliable guide to its being infected or free from infection. The complement fixation test promises to be a more dependable diagnostic method. Our findings are based only on blood tested animals from which we have subsequently received *post-mortem* material ; during the past three years we have applied the complement fixation test to well over 80,000 animals, but have been able to obtain *post-mortem* specimens from only about 1,000, and the great majority of these cases have been clinical suspects. It will be appreciated that our observations on the accuracy of this test in identifying preclinical or latent infection are at this stage provisional and not final.

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There is a third application of the complement fixation test. Certain countries, notably Eire and Northern Ireland, have introduced it as a condition of importation. We are convinced this has stopped a number of infected animals being taken into these countries, but although up to the present we have had no report of failure in this respect, it is much too early to conclude it has been completely effective. It is worth considering using this test when buying an adult animal into a clean herd.

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There are two main objects in carrying out a herd blood test. One is to estimate the possible extent of infection in a herd, and the other is to identify animals carrying a latent or early infection, with a view to eliminating these if it is practical, or alternatively dispose of them immediately they show any signs of clinical breakdown, before they lose their carcase value. Just for assessing the extent of infection one test is sufficient, but for any elimination project interval testing is desirable to begin with, say every four to six months, because we have found mature animals in affected herds may suddenly become blood positive, and when this happens it usually heralds an impending clinical breakdown.

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Practitioners must be prepared for some surprising results with herd tests. At Weybridge we tend to classify herds according to the clinical incidence, and it is not always herds with the greatest clinical incidence which show the highest percentage of reactors in a herd blood test. We think in the one herd all infected animals tend to become clinical and are naturally eliminated, whereas in the other a lot of infected animals tend to become latent carriers and build up in the herd.

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It is unlikely that positive blood reactions will be obtained in animals less than nine months old even if they are infected. Calves born of blood-positive dams frequently show a temporary blood reaction in the first month or two of life.

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We have noticed that a reaction in animals one to two years old sometimes disappears later. Whether this is due to a fleeting infection that is thrown off we do not know. In older animals reactions are usually permanent.

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The use of the blood test must not be allowed to suppress other evidence. This work is in the experimental stage, and we are anxious to obtain as much evidence as we can either for or against the value of the test.

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Infection

Infection has been generally accepted as occurring almost solely in calfhood. After several years of observation on the use of the complement fixation test in the field we are not convinced this is wholly true. The majority of infections probably do take place in early life, but adult infection may prove to be more common than has previously been considered to be the case. If further investigation confirms that the complement fixation test is a reasonably accurate guide to established infection, then either the period of incubation with no blood reaction is of very indefinite duration, or animals may pick up infection at an adult age.

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The method of calfhood infection is very obscure. It has been considered that calves suckling infected cows obtain infection through faeces-soiled udders or straw, or possibly even through the milk. Calves born of infected dams do commonly themselves become clinical cases in adult life ; yet calf segregation methods have not been wholly successful, although this does appear to reduce the number of cases. Evidence is accruing that the possibility of hereditary infection must be considered ; on the other hand, if infection can come through the milk the calf segregation method is not fool-proof unless only milk from clean cows is fed.

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The established practice of advising, in addition to general hygiene, the fencing of stagnant water and the ploughing of old pastures does indicate that infection of older animals has been considered a possibility. Both of

these measures are sound. It is no good fencing stagnant water, however, if the drinking troughs cannot be kept free of dung; we have seen, particularly with yarded cattle, open troughs centrally placed about 2 feet high when the the yard is clear and about 6 inches high when it is full of straw and dung, an ideal vehicle of infection if there are infected animals in the herd. Ploughing of a very heavily infected pasture is a good thing, too, but repeated ploughing requires consideration; we know very little about the survival or behaviour of the Johne's organism in the soil, and it is a possibility, though perhaps a faint one, that the first ploughing buries the infection and the next one unearths it again.

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Summarising over general attempts to reduce infection, we think that general hygiene, calf segregation, the fencing of stagnant water and the ploughing of old infected pastures are all valuable and important, but we do not think these methods alone will eliminate the disease.

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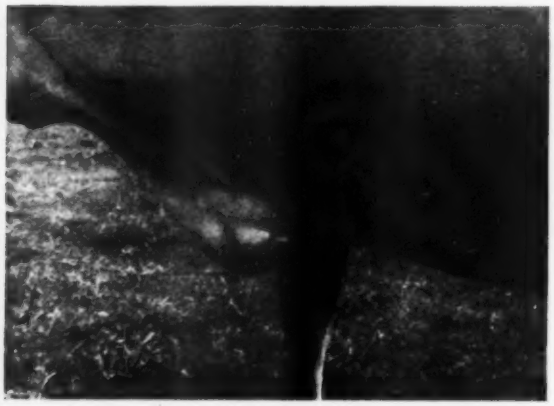
Vaccination

(Two photographs of vaccination nodules on the living animal. One illustrated here.)



A typical vaccination nodule in an adult cow.

Vaccination has been widely practised in France for a long time, and has been applied for several years on a limited scale to a number of selected heavily infected herds in this country, mainly for the purpose of experimental observation.

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The vaccine is a suspension of living Johne's organisms in an oily excipient and is injected subcutaneously in the dewlap. The theory is that the oily excipient protects and contains the organisms at the site of inoculation, but this at the same time affords a protection against infection elsewhere in the body.

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The efficacy of the vaccine has been under observation from Weybridge for a number of years. There is little doubt that in the great majority of instances, when properly applied, it is a very effective method of protection. But it has one very serious drawback, in that it strongly sensitises an animal to avian and to a moderate degree to mammalian tuberculin, and this might mask a true tuberculous infection. This quite obviously limits its use in this country, and vaccination is permitted only in an attested herd under special circumstances, which include very heavy losses from Johne's disease and complete freedom from bovine tuberculosis. Any application to vaccinate an attested herd must be made to the authority administering the scheme.

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There are other minor drawbacks to vaccination. One is that a large unsightly lump may develop at the site of inoculation, which may rupture and discharge. Properly applied there should be no abscess after first injection, but some do occur following a second dose of vaccine.

Another objection is that a vaccinated animal advertises Johne's disease in the herd of origin.

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In carrying out vaccination there are several very important factors to take into account. First of all we believe the vaccine to have no curative action whatever, and if an animal is infected at the time of vaccination the normal course of the disease will not be inhibited, it may even be stimulated. Therefore in this country we only vaccinate calves, and it is of primary importance that they should be done as soon as possible after birth, and that every care should be taken not to expose them to infection before immunity has developed. Breakdowns in vaccinated animals are nearly always traceable to failure to observe these precautions.

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The vaccine should be injected under the skin at the side of the dewlap. A nodule should develop, in our experience rarely greater than the size of a cricket ball, more often about golf ball size. The theory is that while the nodule persists the animal is immune, but if it disappears revaccination is indicated. Sometimes the nodules rupture and discharge. In France, where animals of all ages are vaccinated, rapid disappearances or rupture of the nodules is taken as evidence of infection at the time of vaccination. We are not sure this is always the case, neither does it seem certain that a persistent nodule implies freedom from infection. We think it more probable that the survival of the organisms in the nodule is the controlling factor.

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Cases have been reported to us of very large nodules of unsightly appearance developing. In an attempt to prevent this we have recently reduced the volume and increased the concentration of the vaccine issued from Weybridge.

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It has also been reported that scouring occurs when very young calves are vaccinated. We have no experience of this and are very doubtful of the scouring and vaccination being connected.

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Summary and Conclusions

Johne's disease is a very serious disease problem, one that has been neglected and one which the veterinary profession should make every effort to get under control.

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The chief problem in any scheme of eradication appears to be the identification and removal of the animal carrying latent infection. Work on the complement fixation test at Weybridge shows promise that this test may prove of great value in this respect, in herds free from bovine tuberculosis.

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The reason for an infected animal becoming a clinical case remains obscure.

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Vaccination would appear to be effective, but has serious drawbacks in so far as it interferes with the interpretation of the tuberculin test. This is a factor we have not been able to overcome, and one which restricts its use to a very limited field in this country.

THE SOCIAL EVENTS

In carrying out their carefully planned programme of social events, the Provisional Committee, with the success of its indoor functions assured by the demand for tickets, found a welcome ally for the happy fulfilment of its excursions—three for the ladies—and recreational activities, in the Clerk of the Weather, who was on his best behaviour throughout the week.

Not one of us who was there will forget the hospitality of Aberdeen, while the receptions, the annual banquet, the dances and the informal entertainments all contributed much gaiety and good fellowship. Yet the trip to Braemar on Friday was to many the most enjoyable feature of the week: the mountains, moors and the noble stream, bathed in sunshine the long day through, will remain an abiding memory.

The Ladies' Guild Dance had been advanced to Tuesday, and the President's Reception transferred to Friday: a departure from custom, this had the effect of maintaining a lively interest in the Congress right up to the last, and also introduced a break in the nightly succession of formal evening activities which, if uninterrupted, can result in a great many heavy eye-lids by the end of the week!

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The "Northern Scots" Welcome to the Association

The good organisation which characterised the Congress throughout was evidenced at the outset by the highly successful function held by the North of Scotland Division at the Caledonian Hotel on the evening of Sunday, September 6th.

The flood of incoming members, delegates, visitors and their ladies was made to feel completely at home in Aberdeen by the warmth and sincerity of the welcome accorded them, supplemented as this was by generous refreshment and by music from an accomplished trio. The latter, however, was fated to form but an agreeable background to a steady roar of conversation from the ever increasing company. When the enjoyment of meeting old friends and making new ones was at its height, the proceedings were stayed while Mr. W. J. B. Robson, J.P., President of the Division and Chairman of the Provisional Committee, voiced the pleasure afforded the members of his society by the presence of the parent Association in Aberdeen. It was their aim and hope to emulate, if possible, the success of the memorable Congress held by the Association in that city in 1924. Though through the licensing laws it had not been possible to present in traditional form the spirit of welcome and friendship, nevertheless it was there just the same in full measure. They had taken the opportunity to introduce what it was hoped visitors would find a helpful innovation; members of the local division would be recognised readily by wearing the Congress badge against a background of Gordon tartan ribbon, and would hold themselves in readiness to put their local knowledge and their services at the disposal of the visitors.

The guests having heartily applauded both this thoughtful gesture and Mr. Robson's welcoming speech, Mr. A. M. Graham, the President of the B.V.A., returned grateful thanks to the North of Scotland Veterinary Society for an "At Home" which, so generous and so sincere in the cordiality of its welcome, was such a happy prelude to the Congress week. He was confident that so congenial an evening formed a most hopeful augury for the achievement of outstanding success by the 1953 meeting of the Association in the city of Aberdeen, towards which result the local division had contributed so notably in every way possible and not least by that most happy and enjoyable function.

THE HOST SOCIETY

A Brief History of the North of Scotland Division, B.V.A.

The North of Scotland Veterinary Medical Society was constituted on July 27th, 1894, when a group of "veterinary gentlemen practising in Aberdeenshire and contiguous counties" met in Airth's Hall, 33, Market Street, Aberdeen. Mr. James Thomson, Aberdeen, was elected President of the Society, with Mr. George Barron, Echt, and Mr. Alexander Duncan, Methlick, as Vice-Presidents. Professor Williams addressed the first meeting on "various topics involving the interests of the veterinary profession generally."

The rules and regulations of the Society were drawn up on August 25th, 1894, and it was agreed that the subscription for membership be 5s. on entry and 2s. 6d. annually thereafter. A fine of 1s. (2s. 6d. for office bearers) was imposed on a member not sending an apology for absence from any meeting. In August, 1895, the membership of the Society was 20, most of the members being practitioners in Aberdeen and county; the remainder practised in adjacent counties, some at a considerable distance from Aberdeen. It is worth recording that there were only two absentees from the first three meetings of the Society; this is no mean achievement when one considers the forms of transport available at the close of the century. By 1898 the membership had increased to 35.

Meetings were held regularly in Aberdeen throughout the years, and it is interesting to read the pages of the minute book (a massive volume which is still in use to-day!) where many observations on various diseases are recorded. Milk fever and tuberculosis were frequently discussed. The verbatim reports of many of the presidential addresses also make good reading. In 1902 the President delivered an address on "The University recognition of the veterinary profession," and stated that he considered that "the time had come to approach the universities with a view to the latter granting the profession a higher degree."

In 1915 the Society changed its name to the North of Scotland Veterinary Society, and finally became the North of Scotland Division, N.V.M.A., in 1919.

All meetings up to 1921 had been held in Aberdeen, but, on August 27th of that year, a tour of part of Banffshire was made, with Keith as headquarters. This meeting was voted a great success, but the summer outing never became an annual event.

1924 was an historic year for the Division; for the first time the annual Congress of the B.V.A. was held in Aberdeen. The Division responded to the honour bestowed upon it, and, by all accounts, the Congress was very successful. A record number attended—twice as many as visited York the previous year. Some members who came to the "frozen north" were surprised to find that neither the conditions nor the people were quite as cold as expected!

In the thirties, meetings were held half-yearly until the beginning of the war when activities were suspended. In 1943, however, the standard was raised again (and also the subscription!), and to-day the Society continues to flourish under the guidance of Mr. W. J. B. Robson, Laurencekirk, our newly elected President. The rules and regulations have been revised recently and meetings are now held quarterly, with the Annual General Meeting in June. On account of the wide area that the Division covers —from the country of Augus in the South, to Shetland in

the North and the outer Hebrides in the West—the autumn meeting is held in Inverness or vicinity. It has been the custom of late to have a dinner in January.

The membership of the Division stands at 71 (of whom only one is a lady!), and we are proud to have Dr. J. Russell Greig and Sir Thomas Dalling as honorary associates.

L. G. D.

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Civic Reception and Dance

As those of us who recall the 1924 Congress are aware, whatever is undertaken by the civic authorities of Aberdeen to entertain its guests is most generously fulfilled. This time, to aid them in the exercise of their hospitality, they had at their disposal the splendid beach ballroom, and here on the Monday evening the Lord Provost, Magistrates and Town Council of the city held an official reception and gave a dance for the British Veterinary Association.

The Lord Provost, the Reverend Professor John M. Graham, M.A., and his Lady, with civic dignitaries received the President, officers, members and other visitors to the number of some 375, with the utmost cordiality, but the "official" part of the proceedings was but brief and terminated when, the procession of notables having advanced to the set area at the periphery of the great circular floor, the brief speeches were made, the entertainment declared "on" and the official parties retired to mingle with the throng and join in the fun. And good fun it was. Floor and band (Leslie Thorpe and his orchestra) were first rate and musical entertainment of high quality was provided at intervals throughout the evening by Miss Margaret Innes and Mr. J. Livingstone Wright. Scottish items rightly figured largely in the dance programme and, as usual wherever our Scotsmen and women may be at this function, irrespective of its relation to the Border, the eightsome reel provided a splendid and an athletic climax.

In welcoming his guests the Lord Provost said it was a great pleasure for him to have that further opportunity of welcoming the Association to his city after an interval of nearly 30 years. He had done so already at the first session of their Congress, but that night, he suggested, they should forget for a moment the serious business that brought them to Aberdeen. He knew, of course, that their Association was one of very considerable importance in the life of the country and occupied an authoritative place in the veterinary activities of the world. He would ask them, however, to put all these more ponderous matters behind them and let themselves go, in enjoyment of the holiday spirit that at that season pervaded the town. They thought Aberdeen was fortunate in its grand coast and its glorious hinterland of mountain and river, and he hoped they would not be so preoccupied with their profound veterinary matters that they could allow themselves no time to savour the charms of their surrounding countryside or, indeed, those of the city itself, which doubtless held special attraction for the ladies present. They welcomed to their city many different bodies in conference from many parts of the world, and it was their belief that these felt very much at home amongst them. (Hear, hear.) They hoped that would be the experience of the British Veterinary Association. (Loud applause.)

The President expressed his gratitude, and that of his Association, to the Lord Provost for the very warm welcome he had given them there that night. That morning the Lord Provost had attended their opening ceremony and had accorded them his first welcome there; his second welcome seemed, if possible, even warmer, and he was sure that before that evening was out they were going to have and enjoy much by which to remember that night in Aberdeen. Quite clearly the Lord Provost and his councillors had gone all out to make the members of the Association feel at home there and had even enlisted the weather in their service. They were most grateful to him and to the councillors of Aberdeen for the wonderful show they had put on for them that night, and he would ask the company to accord them a most hearty vote of thanks.

The assembly responded with enthusiasm.

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The President's Reception and Dance

This popular event traditionally affords the members and their ladies the opportunity to pay tribute by their presence to the President's self-sacrificial labours on behalf of the Association during his year of office. Inasmuch, therefore, as the Congress marks the culmination of these efforts, the transference of this function from the customary Tuesday to the Friday—the closing evening—would appear to be justified. Moreover, the change served a further useful purpose also associated with the presidency in helping to ensure the appearance at next day's induction of the new leader, of an attendance more worthy of such an occasion than sometimes has been the case in the past.

At all events, the function at the Northern Hotel on September 11th suffered in no way from the alteration, Mr. and Mrs. Graham receiving as many guests—including the Lord Provost and his lady—as could possibly be accommodated. Their generous hospitality was greatly appreciated and in the dancing which provided entertainment for the company there was every evidence of undiminished zest. During a truly enjoyable evening opportunity was taken to present with their trophies Mr. Donald and Mrs. Barrett, the winners of the golf competitions—a duty most happily performed by Mrs. Alex. Thomson, wife of the incoming President.

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Ministers at the Banquet.

The Rt. Hon. J. Stuart and the Rt. Hon. Sir Thomas Dugdale with Mr. Alex Thomson (L.) and Mr. A. M. Graham (R.).

THE ANNUAL BANQUET

Speeches by Ministers of the Crown

The fact that this year, for the first time, the Annual Banquet of the Association was honoured by the presence—and participation as speakers—of two of Her Majesty's Ministers in the Rt. Hon. James Stuart, M.P., Secretary of State for Scotland, who proposed the toast of the British Veterinary Association, and the Rt. Hon. Sir Thomas Dugdale, M.P., Minister of Agriculture and Fisheries, who replied for the guests, lent an unprecedented degree of importance to the occasion.

The function was held in the Northern Hotel on the evening of Wednesday, September 9th, 1953, with the President, Mr. A. M. Graham, M.R.C.V.S., in the chair.

The high table company, and other guests, included the following, in addition to the President and Mrs. Graham, the President-Elect (Mr. Alex. Thomson) and Mrs. Thomson, and the Ministers : The Lord and Lady Provost of Aberdeen (Rev. Professor and Mrs. Graham), the Marquis of Aberdeen, Professor T. L. Bywater (Marischal College), Senior Bailie F. Magee, Mr. A. Glen (Department of Agriculture for Scotland), Mr. Maitland Mackie (Chairman of the Governors, North of Scotland College of Agriculture), Dr. M. A. H. Tincker (Principal, North of Scotland College of Agriculture), Dr. A. T. Phillipson (Deputy Director, Rowett Research Institute), Mr. W. A. Biggar (Rowett Research Institute), Dr. D. N. McArthur (Director, Macaulay Institute), Sir Alan McLean (Convenor, Aberdeenshire County Council), Mr. J. N. Ritchie (Chief Veterinary Officer) and Mrs. Ritchie, Mr. D. S. Barbour (Deputy Chief Veterinary Officer), Mr. R. Moore (Chief Veterinary Officer, Ministry of Agriculture, Northern Ireland), Messrs. P. Harnett and J. F. Timoney (Department of Agriculture, Eire), Professor R. E. Glover (President, R.C.V.S.) and Mrs. Glover, Mr. W. G. R. Oates (Registrar, R.C.V.S.), Mr. T. Heseltine (President, Pharmaceutical Society), Sir William Gavin (Chairman, Farmers' Club), Dr. W. H. Bradley (Ministry of Health), Major J. G. McGregor (Ministry of Food), Mr. C. V. Dayus (representing the High Commissioner for New Zealand), Mr. R. H. Heywood (Australia House) and Messrs. C. J. R. Corrie and A. L. Clay (Australian Veterinary Association), Colonel Maurice W. Hale (American Veterinary Association), Dr. and Mrs. Scheidy (U.S.A.) and other readers of papers in Mr. J. A. Crichton and Mr. D. S. Soutar, Mr. A. R. Akester (President, Association of Veterinary Students).

When the main company—numbering 320 or so—had assembled and taken their places, the "top table," consisting of the Association's officers and its guests, and led by the President, were piped in to the tune "Scotland the Brave" by Pipe-Major Slater, 4/7th Gordon Highlanders (T.A.) (by kind permission of his Commanding Officer, Lieut.-Colonel Alastair M. Milne, T.D.). For this service, the President duly rewarded him in traditional style with a glass of whisky, which, having responded by toasting the President's health in Gaelic, the Pipe-Major drained at one draught.

Another pleasant surprise arranged by the local members also was greatly appreciated : as a souvenir from the North of Scotland Division, each lady attending the Banquet found on her place a tartan box containing a thistle-shaped bottle of Heather Belle perfume ; while, for the gentlemen, the Division's gift took the form of a miniature bottle of 12-year-old Scotch whisky.

A nine-course dinner, of fine quality, was then served, the loyal toast being honoured at the sorbet stage.

"The City of Aberdeen"

The first toast was in the capable hands of Mr. J. N. Ritchie, B.Sc., M.R.C.V.S., D.V.S.M., Chief Veterinary Officer, Ministry of Agriculture and Fisheries. In proposing "The City of Aberdeen," Mr. Ritchie said : I am particularly proud of the privilege of proposing this toast to-night. I have so many personal ties with this city and indeed it is the first city I knew. It was our habit as a family to start each year with a visit from the country on New Year's Day to attend the Dog Show, to lunch at Jimmy Hay's (by then John Mitchell's), to see the pantomime at His Majesty's. An event. We travelled by train and that would no longer be possible, but at the time it was the best and safest method of travel for my father was a better handler of the ribbons than of the wheel. I mention this because so much that is wonderful in one's youth inclines to pale when viewed by the more mature eye. That has never happened with Aberdeen. It has held its charm and I have visited to work in it for a short while, and on holiday, and have reached it by road, rail and air with pleasure and indeed with more relief than pleasure after stormy passage by sea from Lerwick.

My memories of the city go back rather hazily for some 40 years—a mere moment in the long history of this great town. The recorded history of Aberdeen reaches to the 12th century and is so well recorded that I need not, I think, presume even to summarise it. In any such résumé, one would require to take more than passing notice of the impact of that great man James Graham of Montrose upon the town, and with two Grahams in such prominent positions at this table to-night, it might be tactless for me even to refer to the episode.

The roots of Aberdeen are deep in the past, but it does not depend, and never has, solely upon them for its sustenance. It throws out suckers. (Laughter.) It is a great educational centre with several notable schools. The University founded in the late 15th century has been an abiding influence in the North East, in Scotland and farther than Scotland. Yet the city does not wear its academic dress so obviously as do some centres of learning.

No one would think from the appearance of this Silver City that it is a thriving industrial town, although most folk will associate it with fish and granite. True enough, they are important, but it is interested too in shipbuilding and soap ; combs, canisters and cloth ; paper and paint. The chief industry, however, is probably associated with agriculture, for besides manufacturing agricultural machinery, much of the produce of Aberdeenshire, the richest agricultural county in Scotland, is handled in Aberdeen. That appeals to me, for as a Buchan farmer said to excuse his inability to do justice to a toast, as I must do to-night—"there's nothing in my heid but beasts."

While Aberdeen has some notable and ancient architectural features, the colleges, St. Machar's Cathedral, the Old Brig O'Balgownie, it seems to me that the town planning of its granite buildings and its success in modern times in avoiding the more malignant forms of bungaloid growth are its greatest architectural achievements. Yes, Aberdeen takes on many other cities at their own game and makes a first-class job of it. This remark has no reference to the fact that there is no representative of the North East in the Scottish League Football Cup.

Much is said in song and story about the citizens of Aberdeen. In relation to the characteristic attributed to them I might make comparisons with certain English counties, but I must have a care lest I offend the susceptibilities of the constituents of the Minister of Agriculture. I suppose the Aberdeen story is one of the most subtle uses of

advertisement and I have always been intrigued by it. So often stories reveal qualities far different from the particular one to which they refer.

There was a man who came to Aberdeen, a rather uneducated and ignorant fellow and obviously not a native, who had been advised that, if he developed a cold, quinine was rather a good thing for it. He therefore went to a chemist one day to buy some quinine. After he had left the shop the chemist ran after him hurriedly and said, " I've made a mistake. You asked for quinine and I've given you strychnine." The man seemed unperturbed. " Well, what's the difference ? " he asked. Replied the chemist : " Fourpence ! " An admirable economy in words. (Laughter.)

Two more excellent stories in the same vein and Mr. Ritchie concluded : " Now let me come to the point. The toast is this great modern city of Aberdeen with its notable past. Let us drink to its prosperous future, and with the toast I couple the name of the Lord Provost, the Reverend Professor Graham." (Applause.)

The Reverend Professor JOHN M. GRAHAM, Lord Provost of Aberdeen, in replying, said : In Aberdeen we have many opportunities of coming to respect the exponents of various sciences and, in particular, some of the sciences connected with agriculture. We are yearly reminded by suitable and splendid banquets of the importance of the Rowett Institute, but I am bound to say that I at least as an urban Aberdonian with no immediate connections with the countryside round about have not so far had a good opportunity of measuring the worth and importance of the veterinary scientist.

Of course, most of us may be inclined to respect better any profession by the scale of fees charged—and from time to time as the humble owner of a cat I have been encouraged in this way to hold your profession in considerable honour ! —but this week in Aberdeen we have had a unique opportunity of gauging the worth and importance of the veterinarian. Impressed as we have already been by the importance of your science, we are even more impressed to-night by an Association that is able to attract to its annual banquet such a distinguished company as this, including two Ministers of the Crown. (Applause.) I should like to say on behalf of the city that we count it an honour that you should have chosen Aberdeen as the scene of your Congress this year and we hope that you have found everything in our practical arrangements to your satisfaction. I begin to think that in a social way, too, things have gone pretty well. (Applause.)

Your presence amongst us in enhanced, if I may say so, by the very considerable number of visitors from overseas countries, both of the Commonwealth and of foreign lands, and we give to those gentlemen a very special hearty welcome to this city. (Applause.)

Aberdeen, as the proposer of this toast has said so felicitously, is well known in most parts of the world for certain characteristics, but it is my experience that many people coming from the more distant parts of our own country —I refer to places like London—have no idea of what they are coming to at all. I gather that the wife of your President had provided herself with clothing suitable for the Antarctic, and I have no doubt she brought with her various other serious misconceptions.

There is an advantage in that, of course. When you do not expect too much, you are the more easily gratified by a a few excellences in the place to which you go, and I gather you have been gratified by at least our weather—I may say our typical autumn weather.

I hope you have found, as very many of our visitors find, that in Aberdeen, far north as it is, there is a vigorous, forward-looking community with some modest pretentions to culture. You find it a place in the very forefront of agricultural progress, and I think it is true to say that over the past 150 years the farmer in Aberdeenshire has based his progress on the sound foundation of applying to his farming the results that have been achieved by scientific study of agricultural problems. So in coming to this part of the world, you come, as far as the farming community is concerned, to a place where your particular gifts and achievements are well appreciated.

Now there have been both in private and in public various disclaimers made on your behalf regarding the prosperity of your profession, but I am bound to say—excuse me if I am saying the wrong thing—that you present to me the appearance of a very satisfactory prosperity. Particularly gratifying evidence of that is the most excellent way in which you have treated your guests to-night. I do not know whether from the point of view of the success of your Congress the thing is wisely done. The President was telling me, with what may be just his native modesty, that fully three-quarters of his audience were sound asleep during his presidential address to-day, and I cannot bear to think what may be the condition of the hearers to-morrow.

I trust, however, that this Congress will have served to extend the already ample knowledge of the profession in its particular field of science ; that it will have done nothing at least to undermine its confidence in its future, greatly enhanced in these recent years (I gather) by its association with the universities and in particular with the faculty of medicine ; and I do hope that your Congress here will also do something to enhance what are, I insist, the satisfactory levels of prosperity that you have achieved.

I should like, Mr. President, my lord, ladies and gentlemen, to thank you most cordially for the very kind way in which this toast has been proposed and for the most warm way in which you have received it. (Applause.)

" THE BRITISH VETERINARY ASSOCIATION "

The Rt. Hon. JAMES STUART, M.V.O., M.C., M.P., Secretary of State for Scotland, in proposing a toast to the British Veterinary Association, said : You have certainly done me a great honour this evening in inviting me to propose this very important toast and I should like to thank you sincerely for that honour. I feel a great difficulty in following the two expert orators to whom we have just listened and I feel inclined to lay care aside and to do my best without reference to my notes, but, ladies and gentlemen, the importance of the occasion demands that I should do my best to honour this toast adequately.

I would say, in the first place, that you have done us so well with this hospitality to which the Lord Provost has made reference that I was torn between wondering whether I had made a mistake in early life by not becoming a veterinary surgeon and whether, if one wants to enjoy a longer life, it is better to remain outside the ranks of their honoured profession. At any rate, ladies and gentlemen, I should like to congratulate you and thank you most sincerely.

It is as long as 30 years since this Association visited Aberdeen, and, knowing as you all must how celebrated Aberdeen is for its generosity, I think it is very surprising that you have not been back here for so long. However, I am sure that after a week of serious work, coupled with hospitality such as we have seen to-night, you will wish to return to Aberdeen before another 30 years have passed.

I do wish to congratulate your great profession on much of the admirable work which it has carried out towards securing the health of our livestock in this country. I believe that in particular I should refer to the success of the Attested Herd Scheme because I sincerely hope that before long this

will cover the whole of Scotland, and that is a very great achievement. (Applause.)

This is only one of the many spheres of your activities as I know and as you know, but it is a proof of what can be done when all branches of the profession get together and work together and are determined to make a success of something.

There is really no end to the possibilities which may be achieved when we think that to-day the shepherd may almost be deemed to consider a hypodermic syringe as part of his normal equipment when going about his duties. It shows the enlightened outlook to-day as a result of the lead given by your profession, which the shepherds and others engaged in agriculture throughout the country follow.

There really has been a very rapid development because I think I am correct in saying that research into animal diseases is a comparatively recent thing. When the importance of it was recognised in Scotland the Animal Diseases Research Association was formed at Moredun, Edinburgh, in 1920, and I know that there they are working on research in various directions, and only about two years ago a very valuable and important publication came from there by Dr. Russell Greig entitled " The Shepherd's Guide."

The work in this direction is not the only work in which development is proceeding rapidly. As you all know, the Government appealed not long ago for increased food production and to that appeal farmers have responded well. To mention one particular example, there is the increase in the pig population. It is obviously of great importance to maintain healthy herds of pigs in this country, and I should therefore like to take this opportunity of welcoming the Crystal Violet Vaccination Scheme to immunise them against swine fever.

I notice that there has been some discussion here this week about pigs and their habits and welfare. We used to refer to pig sties, but I realise that that is a very derogatory term to use in these enlightened days and I suppose we shall in future find ourselves referring to centrally heated units of accommodation. At any rate, I trust that this work will have a direct and beneficial effect. I should like just to suggest to the experts on this subject that when they have concluded their investigations they might turn their attention to another disease which I do not think has attracted their interest, and that is political gall bladder. (Laughter.)

I am not going to deal to-night with the research work on poultry diseases because of the presence of the Minister of Agriculture. I am glad that he is present with me and I may add that when I accepted your very kind and hospitable invitation I thought he was going to make the speech I am now making. Anyway, I have stayed with him in Yorkshire and have visited the poultry on more than one occasion. On a cold day there is no more pleasant occupation than standing about in an open field, in the wet, looking at several hundreds or thousands of them running about, quite idiotically in my opinion. (Laughter.) However, having I hope complimented you on the work that is going on in poultry diseases, I shall leave any further detail on the subject to the Minister of Agriculture.

I should like to take this opportunity of congratulating you now—I am afraid you may think it rather belated, but it is nevertheless sincere—on the strenuous work you did in connection with the foot-and-mouth epidemic last year. We are indeed all grateful.

Even if you do not all come from the North, you will be aware of the grave difficulties which confront an area such as the North-West of Scotland, of the difficulties of scattered population, transport, and so on. As a result of this, in 1915 a special plan was devised which is known as the Highlands and Islands Veterinary Service Scheme. This is assisted financially by the Department of Agriculture, and under that scheme, it is I think of interest to know, the services of 24 veterinary practitioners are now available for crofters and small farmers and in 1952 they paid 17,000 visits and dealt with consultations in addition to that by innumerable telephone calls. There is no doubt that this service has been of the greatest value to the crofters and small farmers and I just wish to take this opportunity of thanking the profession for the way in which they have made this scheme operate so successfully.

I should like also in passing to compliment you on your fine work done under the schemes of collaboration between you and the animal welfare societies for the relief of sick animals. That work has a very praiseworthy object.

One other point of importance to which I should like to refer, because it is a matter of considerable pride to us in Scotland, is the system under which the inspection of meat for human consumption is run. In this I think we are ahead of others. This was instituted in 1923. There is a two-tier system of inspection and under this, as so many of you know, a routine inspection is carried out by detention officers, but the ultimate responsibility for the acceptance or the rejection of practically all the meat for human consumption is under the meat inspectors, who are now nearly all veterinary surgeons. I think that works well and it is well worthy of consideration by others. (Hear, hear.) It is a scheme which works in a satisfactory manner and is welcomed by all who have anything to do with it.

I shall not take the trouble here in Aberdeen to go into the reasons why Scotland is in an advanced stage in this matter, as of course it is in many others, apart from commenting on our general progressive outlook and activities. But whatever the reasons may be, I must say that you in your Association and in the way you manage your affairs are progressive and far-sighted. Indeed, I think you are ahead of the politicians in this respect in that you at least know who is going to be your President, not only next year but the year after. You can imagine what a help it would be—I will not mention the present Prime Minister, who seems to be at the top and looks like staying there (applause)—to such people as Mr. Attlee and even perhaps Mr. Aneurin Bevan to have such pre-knowledge.

I congratulate you on another fact. In your President-Elect, Mr. Thomson, and in your Junior Vice-President, Professor Robertson, you have two Scotsmen following your present Scotsman as President. I cannot help congratulating you on this and on the sound choice which you have made. It is a particular pleasure to me to learn from Mr. Graham, your President now, of his close association with the kingdom of Fife and also with the Royal Scots, my own regiment. I always have a warm feeling for anybody who has belonged to the Royal Scots.

In conclusion, I would just say this, that Mr. Graham is a distinguished member of the staff of the Ministry. I think it is very fitting that the great work of the Ministry of Agriculture in animal health should be recognised and I do congratulate your Association in having Mr. Graham as its President this year.

And now, ladies and gentlemen, I have the very greatest pleasure in giving you the toast of the British Veterinary Association coupled with the name of your President. (Applause.)

Mr. A. M. Graham, M.R.C.V.S., President, B.V.A., who was cheered on rising to reply, said : I am very happy and honoured to respond to the toast of the British Veterinary Association which you, Sir, have proposed in such appreciative and generous terms. This Association has visited

Scotland on several occasions in the past, but I think this is the first on which we have been honoured by the presence of the Secretary of State for Scotland (applause), and we should like also to welcome to our banquet to-night Sir Thomas Dugdale, the Minister of Agriculture. (Applause.) To have two such national figures with us to-night is something which we greatly cherish.

You have referred, Sir, very appreciatively to the work which the veterinary profession is carrying out and we do think very highly of the terms in which you have spoken of us. The health and well-being of our flocks and herds is our especial charge and we do think that it plays a very great part in the health and wealth of this country.

In the great variety of our professional tasks there are two particular aspects which appeal greatly to us, Sir. One is preventive medicine on a national scale. You have referred to the Attested Herd Scheme and we are very pleased with the great progress which this has made in Scotland. It is progressing also south of the border, but I think, Sir, Scotland has given us the lead in this respect.

You have referred also to the Swine Fever Crystal Violet Vaccination Scheme. The Ministry of Agriculture first of all thought of this scheme and they then consulted the B.V.A. We are behind it, Sir, and we think it will be a great success and that in due course it will lead to a greater production and to a better quality of pigs. We believe that if we all co-operate we can make a great success of this scheme.

However, apart from the national aspect there has been one development of a domestic nature which resulted from it—that is the unearthing of new literary talent in the profession. Schemes of this nature, at their inception at least, do not appeal to everyone, particularly in the veterinary profession, and amongst our very numerous members there are some who expressed their views on it in no uncertain fashion in our professional journal, *The Veterinary Record.*

Their comments on this scheme, Sir, were both vivacious and imaginative and we were rather pleased—"we" being the editor and officers of the B.V.A.—that our efforts had awakened such literary interest. However, our satisfaction was somewhat dimmed when we found that it was not so much at the scheme that these criticisms were directed—I think a better term would be these "literary missiles"—they were directed at the officers and it became more overcast still when we found that these marksmen could be just as apt with the fountain pen as with the knife. Nevertheless, we think the scheme is an extremely good one and hope it will go forward and that it will do a great deal of good.

There is, however, a more serious aspect of this to which I should like to refer—and that is the fact that sometimes our worth and efforts in these national schemes are not fully appreciated. In ancient Arabia, I am told, veterinary surgeons held such a very pre-eminent position that it was considered offensive to suggest even that they should have a fee. We are not ancient Arabians. We think the labourer is worthy of his hire and when we decide to embark on such schemes the efforts which are sometimes made by certain organisations to dispute this self-evident fact have given us, on occasions, cause for uneasiness.

We give these schemes our enthusiastic support. They are of great benefit to the country, they are of great benefit to the farmers, and we do feel that as one party whose services are indispensable to their success we should receive a reasonable return. I just say that because I do feel it is not always easy to co-operate to our fullest extent when we seem to be the side who frequently comes off with rather a meagre return.

However, Sir, I hasten to assure you that we are behind these schemes and we wish them to continue and prosper because we realise they are for the good of the country and for the good of agriculture.

With several of my colleagues I recently attended the International Veterinary Congress at Stockholm. There were between 2,000 and 3,000 veterinary surgeons there, from between 50 and 60 different countries, and a very wide range of subjects was discussed. The point that struck me above all others was that in many of those countries the field covered by veterinary surgeons was considerably greater than that covered in this country, and we felt that our range or our field could very well be extended.

You have referred to one, Sir, the field of meat inspection. In Scotland you are far ahead of us south of the border in that respect. Here you follow the animal right through. South of the border we seem to lose touch with it as soon as it goes into a slaughterhouse or even a collecting centre. Thereafter the animals pass into other hands and the result is that the public are deprived of a very considerable safeguard as regards supervision of meat inspection, and also —and we think this is of absolutely vital importance—the farming community and the veterinary profession are deprived of a very considerable amount of information regarding production and disease. We know that if we could follow these animals right through it would be of considerable help not only to ourselves in the elucidation of disease problems but also, we believe, to the farmers from the point of view of production methods.

I do not wish to labour this one point, but I was certainly impressed at the international meeting by the wide field and variety which was covered by veterinary surgeons in other countries, and I should like to say now that we in this country are ready and willing to extend our work in these other directions.

We as a profession take a very wide view, both of our duties and of the services we can render to our fellow men. We are grateful to you, Sir, for referring in such generous words to the work we are doing. We only hope that in the not too distant future we shall be able to give our specialist knowledge and our scientific research to every field of agriculture, public health and nutrition.

Sir, I should like to thank you for the very kind way in which you have proposed the toast of the B.V.A. There was one thing on which both you and the Lord Provost remarked and that was the apparent, shall I say, prosperous position of the veterinary profession as evinced by this banquet. I may say, Sir, that we have been putting on a special show to-night for the benefit of our distinguished visitors. (Applause.)

"Our Guests"

Mr. Alex. Thomson, M.R.C.V.S., President-Elect, B.V.A., proposed the above toast in a speech punctuated with the applause which greeted each mention by name of a distinguished guest. Mr. Thomson said: It is my privilege and pleasure to propose on behalf of the British Veterinary Association what is, in spite of the excellent speeches which have gone before, one which our members will, I am sure, respond to with enthusiasm—"Our Guests." Veterinary surgeons (and no less their wives) welcome an opportunity such as this to sit at table with their friends in the full knowledge that the telephone is unlikely to interrupt or (what is, I believe, more annoying to the distaff side) that the meal might have to start without the host being present.

Our friends and guests of this evening fall into the categories of the old and new and we hope our new friends will, in the succeeding years, continue to honour us with their friendship.

Of the former, I am sure you will agree with me that the ladies might be said to be the most important—they supply

the grace and charm to this function (and possibly a great deal of common sense behind the scenes in our Association). We are grateful for the opportunity of saying "thank you" to them. (Applause.)

It is not my intention to single out many of our friends for special mention: they know we think highly of them and in asking them to our board we have done so with sincerity.

We have representatives from, I think, all the facets of our activities as a profession, from boroughs and counties, the Commonwealth of Australia, New Zealand and Canada.

Colonel Hale represents the American Veterinary Medical Association and the country to which the world to-day owes so much. I think I might take this opportunity of saying how pleased we are that Dr. Scheidy has been able to be present here to-night.

I should like to welcome also Dr. Pedersen from Denmark, a country with which this Association is having an ever-closer relationship from year to year. I am pleased to welcome also Mr. Hazeltine, the President of the Pharmaceutical Society. Professor Glover, President of the R.C.V.S., needs no introduction, but in him we have, I know, one who will further the close "association" of our two bodies, and it is increasingly evident that we have many common problems for the future.

At this stage it might appear that I am in some little difficulty. Precedence demands certain rules for the placing of our distinguished guests. My Lord Provost of Aberdeen is, I know, looked upon as the principal guest at any gathering held within this city; the Hon. James Stuart, Secretary of State for Scotland, representing Her Majesty's Government, and Sir Thomas Dugdale, the Minister of Agriculture. It might appear, therefore, that if I place them in the wrong order several things could happen.

The Lord Provost might have *me* publicly executed, and the Secretary of State might set up a Committee of Enquiry, but neither would seriously affect the Association; but, Sir Thomas Dugdale might reduce the financial returns to the profession from his Ministry, and *that would* be serious. (Laughter.)

As the responsibility, therefore, rests on me, I judge it best to refer to our hosts of this week—The City of Aberdeen. I was amazed to find that the representatives of this city are not Aberdonians at all. Perhaps there is a sociological fact of some significance here, as instanced by our good friend Mr. Ritchie: perhaps they take the suckers in—and make them work. (Laughter.)

Of Lord Provost Graham, I can tell you that he is one of the youngest Lord Provosts ever in Aberdeen, the first professor and the first minister ever to hold this office. A west coast man, he was probably a contemporary of mine at Allen Glens School; however, he would be in an A class! (Laughter.)

Of Mr. Frank Magee, the Senior Bailie of this town, it is said he is the most outspoken Sassenach ever to have been on the Town Council. I believe he is a real personality, who is ready to pick up the gauntlet before it is even thrown down.

Mr. Frank Lawson—a Fifer—has been resident in Aberdeen for the last 15 years. He is the Chairman of the Finance Committee of the County Council and what better combination could you get, where money is concerned, than a Fifer and an Aberdonian. He is also President of the North of Scotland Pig Breeders' Association and we have heard the echoes of pigs and money within our own Association recently.

We are also pleased to welcome the Marquis of Aberdeen. He is Lord Lieutenant of the County, and, of course, Guardian of Her Majesty during her sojourn in the North.

As the distance from Westminster to Edinburgh is infinitely greater in one direction, and the agricultural problems seemingly are different, we have a State Department and a Secretary of State who is responsible for almost everything that happens in Scotland. In the Department of Agriculture he is supported by the Secretary, Mr. A. Glen, and the Deputy Chief Veterinary Officer of the Ministry of Agriculture, Mr. Barbour, who are responsible for the operation of, among other things, the Highlands and Islands Veterinary Service Scheme.

Although this is the first occasion on which we have had the pleasure of entertaining Mr. James Stuart, he has a very close liaison with our profession in Scotland even if he does not know it. He is, however, well qualified to occupy this high office having been M.P. for Moray and Nairn since 1923—that is a long time, ladies and gentlemen—and Chief Whip to the present Government from 1941 to 1948.

And last, but by no means least, is our very good friend Sir Thomas Dugdale. I should like first of all to congratulate him on his elevation to Cabinet rank in Her Majesty's Government. We know that he is deserving of this honour and I am sure that the status of agriculture on the economy of the country will be enhanced accordingly. (Hear, hear.)

Perhaps the two government departments with which we as a profession have the closest contact are those of the Inland Revenue and Agriculture. With the latter we have a very happy relationship. This is due in part to the personality of our Chief Veterinary Officer, Mr. J. N. Ritchie—a son of Aberdeenshire of whom she may well be proud—and to the keen interest which Sir Thomas has shown in the Veterinary Department of his Ministry, as evidenced by his presence at our Congress on two successive occasions. I hope that he will continue to qualify for the category of our "old friends."

We can choose our friends but not our relations, and that reminds me of the story of the man who brought a dog to a veterinary surgeon one day and said he wished to have the animal's tail docked. It was not the kind of dog for which one would normally dock the tail. It had rather a longish tail and looked somewhat like a setter, but the man emphasised that he wanted the tail taken off completely. The veterinary surgeon said, "You know it is going to spoil this animal's appearance? Tell me, why do you wish the tail removed?" "Well, as a matter of fact," said the man, "my mother-in-law is coming to stay with me shortly and I don't want her to have even a vestige of a welcome!" (Laughter.)

Well, as you know, the Association is not in sympathy with docking, and at this happy gathering I would ask you to show your pleasure and the warmth of your welcome to our visitors this evening. I have much pleasure, therefore, in asking the members of the B.V.A. to be upstanding. I give you the toast, "Our Guests," coupled with the name of Sir Thomas Dugdale. (Applause.)

The Rt. Hon. Sir Thomas Dugdale, M.P., Minister of Agriculture and Fisheries, in replying, said: I do not know why I have come to-night—a Yorkshireman here in Aberdeen! On my right is the President of the British Veterinary Association, a Scotsman, and on my left the President-Elect of the Association, a Scotsman. On my right again is the Secretary of State himself—and how glad we are to have him at this gathering—and, last of all, but not least, my own adviser, not only a Scotsman but an Aberdonian!

I have been asked to respond on behalf of your guests. I do that and I do it thinking and feeling that I have not got a job of work at all to do to-night. I am your guest among a lot of other guests, very many of them, in fact all of them, more distinguished than I.

Let me come to the one serious thing I have to say. The Secretary of State for Scotland gave you the big speech about your profession and all the work you are doing. I should like to reinforce what he said about foot-and-mouth disease last year. You did a tremendous job, and I would like to say so publicly here in Aberdeen to you the representatives of the British Veterinary Association. You can be proud of it. (Applause.)

To-day I can report as Minister of Agriculture that we are free of the scourge at the moment—absolutely free throughout the length and breadth of the United Kingdom. (Applause.)

That does not mean, of course, that we shall remain free, but we are free at the moment, and it is largely due to the work of members of your Association that we have reached this stage. If I can pick out anybody who did more than anybody else to lead the team it is that exile from Aberdeen, Mr. Ritchie, the C.V.O. (Applause.)

I do feel it is a great compliment to respond for all the guests to-night. I could get into trouble if I referred to a lot of subjects I am not going to refer to—Compton, the experimental station, pigs, poultry—but throughout the length and breadth of the United Kingdom all those who are represented here are doing a tremendous lot of work for the agricultural industry. It is a very great pleasure that I can couple this response with the names of all those who come from overseas to your gathering.

Why are we all here? That is really the thing. We are here because you have invited us to come amongst you and we know that when we do come amongst you we have a grand evening. But that is not the only reason why we have come all the way to Aberdeen. With all its attractions, and with all its "usual" weather, it is a very long way to come. We all come here really because we know what a very good job of work your Association is doing and we want to do honour to you and your members and to tell you to carry on the good work in the future. That is why we are here.

We are here also because we know that all the time the farmers are beginning now to look upon the veterinary surgeon not, as at one time they did, as some awful bogy but as a real friend who makes ordinary visits to their farms and their holdings and discusses with them their goings on and how they are getting on with their job. He is becoming more and more the adviser and friend in the prevention of disease, rather than the chap who is called in in an emergency. If we get that, we are getting a very long way, and in my official capacity as Minister of Agriculture I know what a tremendous thing it is from the official side.

If you add up the losses to our food production in the United Kingdom from various animal diseases over the past 50 years the result is a very tidy sum. I congratulate you upon the individual and collective work of members of your Association and I ask you to go on and to continue the good work in that particular direction, having in mind all the time that prevention is better than cure. It may be a platitude, but I say it again deliberately this evening.

May I apologise to the distinguished members of this county for the fact that I have had the honour of responding to this toast. I am certain the Lord Lieutenant of Aberdeen would have done it very much better, and all I would say is that it is a particular honour to respond to this toast in his presence.

With those few remarks, ladies and gentlemen, I would say on behalf of all the guests, from wherever we may have come—from north, south, east or west, by air or over the sea from far-off lands—we shall remember this evening. We thank you for it. We wish your Association well and we shall look forward to meeting you again in other places and in other climes. We wish you every good luck in your work, which is so valuable not only from the professional point of view but from the point of view of the whole production effort to produce food for the people of these islands which is so necessary. (Applause.)

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Postscript for Gourmets

NORTHERN HOTEL, ABERDEEN

Occasion—Annual dinner of the British Veterinary Association.
Number of covers—320.

Melon Glacé
Crème de Tomate
Crème de Champignon
Cold Dee Salmon Mayonnaise
Cotelette d'Agneau Garni
Sorbet
Dinde Rôtie et Chipolata
Pommes Anglaise — Pommes Château
Haricots Verts — Petits Pois
Bombe Tutti Frutti
Welsh Rarebit

(Entry in *Caterer and Hotel Keeper*, September 19th, 1953)

And for "The Northern Hotel"

There's one thing that can be said of the Aberdeen hotel which catered for the British Veterinary Association Congress dinner.

It nobly rose to the occasion when presented with the after-dinner request: "Cigars for the ladies, please!"

Yes, undoubtedly for the first time since the habit took on in the South with the fair sex, two of the illustrious company lit-up and gave Aberdeen its first sight of women smoking cigars.

—*Aberdeen Evening Express.*

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V.V.B.F. Ladies' Guild Annual Congress Dance

On Tuesday, September 8th, 1953, a most successful dance was held at the Northern Hotel, organised by the Ladies' Committee of the Northern Division. As it was the beginning of the Congress week and very well patronised, the high standard this function has set of recent years was easily attained. The varied and excellent prizes generously given to Mrs. Service for the raffle more than repaid her for all the work she did in connection with it. Last but by no means least, the refreshments were quite the best that have been provided for many years. It is confidently hoped that a substantial sum will be realised for the Ladies' Guild by an evening that was thoroughly enjoyed by all.

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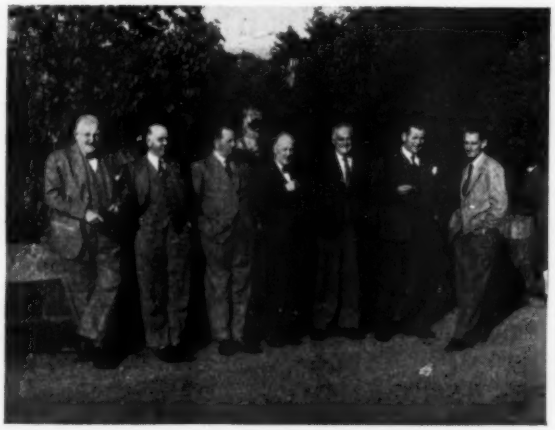

At Braemar.
L.-R.—Messrs. Henry Sumner, R. W. Cassells, R. Swaby, F. Knight, W. O. Jones, Neil Mathieson and D. L. Hughes.

ROYAL DEESIDE

A sojourn in the grey city of Aberdeen is rightly thought incomplete without a pilgrimage through Deeside and a contemplation of its charming vistas of hill and valley, loch and river. To this end, a company of some 140 members willingly took advantage of a tour arranged for the afternoon of Thursday, September 10th, by the local organisers of the Congress.

The main western road from the city, with the River Dee on the left, led a series of four comfortable coaches through the village of Peterculter with its paper mills and romantic statue of Rob Roy, to Banchory, the first Deeside town. Before entering the town there had been a glimpse of Crathes Castle, still inhabited by the Burnetts of Leys, who since 1323 have held these wide Lands of Leys. Away to the left were seen the lower hills of the Grampians, with their odd and musical names, among them Cloch-na-ben and Clochandighter, and, outside the town, a small lavender farm, unique in these parts.

Through pleasant woods, past the Village Green of Aboyne, where the annual Highland Games had lately been held, to the wide Moor of Dinnet, wine dark with heather, and in the distance the sparkling blue of Loch Kinord. Here the company first observed the higher mountains of Upper Deeside looming against the autumn sky, and, in the distance, the narrow Pass of Ballater, through which the road led on to Braemar.

The heightening interest of the company was evident as they approached the Royal lands of Balmoral. Abergeldie Castle on the river bank, with its picturesque towers, was the first herald of Royal residence, for this ancient seat has been leased to the Sovereign from Queen Victoria's time. Then, high on the road bank, Crathie Church came into view, famous for its Royal worshippers, and just onward, above the dark screen of trees, fluttered the Royal Standard on the tower of Balmoral Castle. Here since 1848 the Royal Family has had its Scottish home, and fortunate glimpses of the silver granite castle were frequently obtained as the coaches passed along the tree-shaded road. So onward, with Invercauld House, the residence of the Chief of the Farquharson Clan, on the right, and the ancient military road and bridge, now closed, on the left, to the stark grey tower of Braemar Castle, and the quiet mountain village of Braemar. At the Fife Arms Hotel in Braemar the company rested for tea.

The homeward route, on this pleasant day of sun and shadow, led past Balmoral and the gardens of Abergeldie Castle, to the south bank of the shimmering Dee. Here were seen to advantage the towering pinnacled ridges of "Dark Lochnagar," and below, the sombre Forest of Ballochbuie so dear to Queen Victoria. Later, the town of Ballater appeared to the north, and a steady winding ascent through birch and pine, by Pannanich Wells and the great Forest of Glentanar, brought the company again to the Bridge of Aboyne. Here was seen the havoc wrought by the winter hurricane among the tall forest trees.

A deviation from Aboyne enabled the company to view the wide valley of the River Feugh with its narrow picturesque bridge where the salmon may be seen by dozens patiently leaping the rapids. In the fields the odd sight of bright yellow sheep recently dipped in this characteristic colour interested many members. Again on the left appeared a distant view of the fairy towers of Crathes Castle, and then shortly after, the seven arches of the old Bridge of Dee and the streets of Aberdeen.

It was generally agreed that this excursion, made in weather ideal for Deeside, was thoroughly enjoyed and enabled those

The veterinary "Braemar Gathering."

members who had not hitherto visited the neighbourhood, to gain a favourable impression of this much advertised and Royal valley. Some assistance was given in pointing out places of interest by the Deeside Field Club, who provided four couriers for this purpose.

W. J. M.

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The Ladies' Excursions

This year, thanks to the active enthusiasm of the strong Ladies' Committee of the North of Scotland Division, aided and abetted by Dr. Alastair Greig and others, the shopping and other pleasures afforded lady visitors to Aberdeen were supported by a triple programme of excursions, to the enjoyment of which the lovely weather experienced throughout the week contributed enormously.

Paradise Woods and Alford

"On the afternoon of Tuesday, September 8th," writes B. H.-W., "the ladies left South Silver Street, in glorious sunshine, on their trip to Alford and Paradise Woods. Leaving the busy city of Aberdeen behind, we entered into a beautiful agricultural district; passing through Bucksburn we had on our right the Rowett Research Institute and the Craibstone Institute on our left, followed by a magnificent view of the Grampian Mountains and Bennachie. A halt was made at Hallforest Castle one mile south west of Kintore; this is one of the few examples of 14th-century keeps now remaining in the north, built by King Robert Bruce. Travelling on through grand Scottish scenery on all sides, with the River Don sparkling in the sunshine winding its way through the valley, the hills carpeted thick with purple heather, we stopped at various vantage points; at the place of Tilliefourie, Castle Forbes (the old house was known as Paradise). Now we were entering the woodland known as Paradise Wood, which was the original area of afforestation. At this point the River Don has a picturesque beauty which can only be seen to advantage by leaving the railway and taking to the road. Here at Ramstone the river is crossed by a foot suspension bridge leading to the main road on the north side of the river to which bank slopes Millstone Hill (1,340 feet), Bennachie and Cairn William (1,469 feet). Two miles from the village of Monymusk a landscape garden was laid out in 1719. The pines are gigantic but stately and beautiful; the river bounds one side of this earthly paradise which the late Queen Victoria visited twice; on the south side Pitfichie Hill (1,244 feet) overlooks the scene. In 1716 the second Laird planted 50,000,000 trees: the squirrel and the larch keep busy the caretakers of this stretch of afforestation.

"By this time the ladies were ready for their afternoon tea, which was partaken of in a very picturesque hotel right by the river called 'Forbes Arms Hotel' and here was spread a sumptuous meal: taking to the road once more we returned to Aberdeen via Cluny Castle, everyone in the best of spirits."

Grandholm Woollen Mills

Following the Congress photograph taken on Wednesday at the Technical College, the ladies visited the woollen mills. A guide conducted them through many departments —showing each process that the wool passed through after leaving the sheep's back and becoming cloth—the scouring, then sorting and grading, soaking, drying, blending, larding, spinning, warping, draining, weaving, mending, milling, re-scouring, shrinking and finishing.

This interesting and instructive tour culminated in an excellent tea.

A visit was then made to the selling shop where one saw displayed the beautiful materials in "bolts" for sale at prices to suit all pockets. Those who missed this trip were unfortunate.

Crathes Castle

The third and again thoroughly enjoyable excursion was to Crathes Castle, on Friday afternoon. This castle, the seat of the ancient family of Burnett, stands on a sunny slope looking down upon the north bank of the River Dee about two and a half miles below Banchory. Visitors were particularly impressed with the ancient tower. The castle is, in fact, one of the finest specimens of Scottish baronial architecture and is stated to be unique because of the quality of its interior decorations and furnishings. On such a sunlit afternoon the party could appreciate, also, that the surroundings of the castle are famed for their beauty even on lovely Deeside. The interior, unfortunately, was not open to inspection, but the ladies were intrigued by the garden's truly remarkable collection of British and foreign shrubs and hardy flowers.

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The Informal Evening

Following rearrangement of the customary programme of Congress evening functions, the "local" members of the Provisional Committee introduced a new venture, held in the ballroom of the Northern Hotel on the evening of Thursday, September 10th, with the intriguing title "Informal Evening (with some entertainment)." No further details had been announced, and, perhaps because of the air of mystery surrounding this function, the ballroom was packed to capacity with a curious and expectant assembly. Nor were they disappointed, for a full programme had been arranged, interspersed with numerous short intervals for the provision of refreshments.

The evening's entertainment was conducted by Mr. W. J. B. Robson, assisted by other local members of the Provisional Committee, who must be congratulated on the rare qualities of skill and judgment displayed in their selection and ordering of the programme, and in introducing an atmosphere not only of gaiety but apparently also of happy spontaneity; but, it is obvious on reflection, this could only have been attained as the result of long and most careful preparation. The completeness of the evening's success could be judged from the breathless stillness with which the crowded audience received each item in turn, the gales of delighted laughter at appropriate moments, and then, in the intervals between items, the sudden merry hum of vivacious conversation accompanying the clinking of glasses and cups.

While the audience were assembling, they were entertained by a member of the North of Scotland Division, Mr. W. M. S. Morris, at the pianoforte. Following this, a group from the St. Nicholas Dancers, led by Mr. Ian Smith, were introduced to the company, and proceeded to enthral it with well-nigh perfect expositions of Scottish Country Dances. Despite the disadvantages of a polished dance floor and (owing to the crowded room) a minimum of space, these local lads and lasses in full Highland dress executed the complicated steps and figures with wonderful delicacy, grace and precision. After their second appearance of the evening, they were allowed to rest only after they had been persuaded, in response to repeated and unremitting cries of "Encore," to demonstrate how an

eightsome reel should *really* be done; and their performance must surely have put to shame many of our own members (including, alas, even the Scotsmen!) who on other evenings of the week made their own poor attempts to execute this delightful dance which, most unfortunately, is so often vulgarised and ruined.

The remaining local guest artist of the evening, Mr. John Mearns, was also received with the warmest appreciation. Surely outstanding in his varied repertoire was his character study of a Scottish shepherd and his dog, and this he followed, together with Mrs. Mearns, with an unaccompanied vocal duet of great beauty.

But while these guest performers, who so kindly and willingly gave their services for our enjoyment, may be said to have laid the foundation of the evening's entertainment, the performances of some of our own members were little behind in quality, and demonstrated to the full that even the most august members of the veterinary profession have many sides to their characters. One of these is certainly a lively and vivid imagination, as witness Mr. Sydney Jennings, who, in his quite inimitable fashion, and aided by his own peculiar brand of stage "props," rocked the audience with his original songs and recitations, full of witty and topical allusions. Mr. J. N. Ritchie also enlivened the company with his description, spoken unassumingly in the dialect of his native Aberdeenshire, of the events leading up to—and resulting from—an invitation to dine with the laird! Even those who, through unfamiliarity with the dialect, were unable to follow and so appreciate to the full the brilliant detail of his monologue, were nevertheless infected with the bursts of merriment and the rippling chuckles of those who did, but all were able to relish the artist's neat mimicry and the charm of his delivery.

Among others who contributed most ably to the programme were Mrs. Gordon Fraser (the wife of a veterinary surgeon), whose violin recital was of very high quality, and who concluded her performance with a novel and clever imitation of bagpipe music on two strings of her instrument; and Dr. J. Russell Greig, whose evergreen recitation, "The Belle of the Ball"—last performed at a B.V.A. Congress 17 years ago at Scarborough—was delivered in his characteristic style, and was received as enthusiastically as ever. The penultimate item in this highly varied programme introduced a note of high hilarity, as Mr. D. W. Deas, having at last, with brilliant buffoonery, contrived to adjust himself and the microphone to approximately similar altitudes, proceeded to convulse his listeners by rendering "The Shooting of Dan McGrew" with an admirably restrained sense of farce. And finally, with Mr. Morris again at the piano, the entire company joined together in chorus, singing songs not only from all four home countries, but also from a number of lands overseas with representatives attending the Congress. And on the stroke of midnight, with the President voicing the sincere thanks of all present to those responsible for the evening's enjoyment, the Informal Evening (with some entertainment) came to its close, the assembled company, in high spirits and great good humour, rising to its feet to join in "Auld Lang Syne" and the National Anthem.

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Congress Golf Competitions

A strong wind greeted the 21 contestants (19 men and two ladies) playing over the undulating links of the Royal Aberdeen Golf Club on the Thursday afternoon of Congress week. The ladies played over the shorter course and Mrs. E. P. Barrett, Guildford, won the Dunkin Cup with Mrs. A. Pottie, Paisley, as runner-up.

Instead of the usual medal round, the men played a bogey competition as had been done in 1934. After many stern tussles with the Colonel, two players finished two down. The winner of the Simpson Trophy was Mr. L. G. Donald, Bucksburn, who won by virtue of a better "second-half." Mr. W. Rhodes, Tolworth, was runner-up. The cups were presented by Mrs. Alex. Thomson at the President's reception and dance on Friday evening.

THE COMMERCIAL EXHIBITION

By common consent amongst those welcome participants in our annual Congress, the representatives of firms catering for the requirements of the profession, the exhibition of drugs, surgical instruments and appliances, books, etc., has never been more satisfactorily housed. Situated in the Music Hall block itself, the room devoted to the exhibits was at least as large as the meeting place of the delegates, permitting the erection of stands sufficiently ample for effective display. So far as we could determine, everyone made the best possible use of this opportunity, and throughout the week the exhibition was a centre of admiration, interest and enquiry.

The ceremonial opening by the President, Mr. A. M. Graham, who warmly commended the tasteful and informative show to the studied attention of the members, is reported in our account of the proceedings in the main hall on the morning of Monday, September 7th, while each of the stands comprising the exhibition is described below.

The Stands

Allen & Hanburys Ltd., Bethnal Green, London, E.2. Exhibiting for the first time at a B.V.A. Congress, this firm featured a range of antibiotics including Veterinary Distaquaine Suspension and the recent introductions Mixtamycin, Distavone and Streptaquaine, the latter being a ready prepared stabilised solution of streptomycin.

A new range of Veterinary Alficetyn (Brand Chloramphenicol) preparations was displayed. The wide range of activity of Chloramphenicol was demonstrated by a chart showing susceptibilities of several organisms to various antibiotics.

Veterinary Alficetyn Capsules are available for oral administration in packs of 12 and 100 capsules.

Veterinary Alficetyn Eye Ointment is indicated in the treatment of conjunctivitis and keratitis, particularly when due to rickettsiae.

Veterinary Alficetyn Dusting Powder, for the treatment of infected wounds, burns and ulcers.

Veterinary Alficetyn Buffered is a dry powder for the preparation of a solution which is convenient to use for either eye drops or nasal drops.

The attention of veterinary surgeons was drawn to the recent price reductions in all antibiotics shown.

Most prominent on the stand was Allen & Hanburys' new treatment of mastitis—Dapsetyn. This product, which aroused much interest, is an intramammary injection containing Chloramphenicol and Dapsone, two drugs which together exhibit a marked synergisms in action against gram-positive bacteria in conjunction with the activity of chloramphenicol against gram-negative organisms. A wide range of usefulness has been demonstrated. Dapsetyn was introduced for the treatment of acute and chronic mastitis due to organisms which do not respond to penicillin. It is particularly indicated in the treatment of summer mastitis and mastitis due to *Str. uberis*.

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Arnold & Sons, 54, Wigmore Street, London, W.1. The stand of this well-known firm of veterinary instrument makers featured new products of many different types, amongst which were analgic needles which are becoming increasingly popular amongst veterinary surgeons due to their long life and great penetrating powers. This needle has a point of revolutionary design, the bevel being convex instead of concave as is usual.

Silicone solution for the treatment of instruments and needles was on view. This substance causes a fine film, which is water repellent, to become fixed to the surface of the instrument and retards the clotting of blood, etc., in hypodermic needles.

Samoline, the new braided polyester yarn of great strength and non-capillary action for use as a ligature, also was exhibited. Not only is it stronger than nylon but ties easily and is completely serum proof.

From Denmark came Dr. Dyekjaer's new teat knife and also Dr. Mose's teat bougies. The latter are for use where the end of the teat has become damaged and the cauterising action of the bougie keeps the teat duct open until healing is complete.

In addition to the above, there was on show a completely comprehensive range of equipment required by veterinary surgeons, all of which caused great interest.

For the first time some agricultural equipment was shown, since Mr. Shanks' discourse on animal feeding and his demonstrations with the Arnold Foster Mother for piglets and the Rose-Miller Calf Feeder had aroused considerable interest. It is interesting to note that both of these latter feeding devices are excellently suited for the administration of antibiotics in the milk feeding of young pigs and calves.

We would remind veterinary surgeons that Arnold & Sons have branches at 1, Market Street, York; 130, George Street, Edinburgh, and 44, Kildare Street, Dublin.

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Baillière, Tindall & Cox Ltd., Publishers and Booksellers, of 7 and 8, Henrietta Street, London, W.C.2, displayed a full range of current British and American veterinary books. These included the recent eighth edition of Banham's "Veterinary Surgeon's Vade Mecum," completely revised and brought up to date by W. Alastair Greig, and the sixth edition of Hobday's "Surgical Diseases of the Dog and Cat," edited and enlarged by Professor McCunn. Other new editions which attracted considerable attention were the third edition of Wright's "Veterinary Anaesthesia," the fourth edition of Kirk's exhaustive "Index of Diagnosis," and the fourth edition of one of the classics of veterinary literature, M'Fadyean's "Osteology and Arthrology of the Domesticated Animals."

Among American books, attention was drawn to the new edition of Coffin's "Manual of Veterinary Clinical Pathology" and to a new book by I. E. Newsom, "Sheep Diseases," which provides a complete and detailed coverage of its subject and is the most exhaustive and up-to-date manual obtainable.

Standard works on show included Kirk's "Index of Treatment," Anthony's "Diseases of the Pig," and Hagan and Bruner's "Infectious Diseases of Domestic Animals," while Baillière's new autumn 1953 catalogue of veterinary books, listing over 250 current veterinary books and periodicals, was in great demand.

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Bayer Products Ltd., Africa House, Kingsway, London, W.C.2. The Bayer stand this year gave prominent place to one of its new products, "Calten." The use of this product as a method of prophylaxis in milk fever created considerable interest amongst veterinary surgeons. The fact that one injection would increase the serum calcium level over a period of three to four days and, as a result, assist in preventing the sudden drop after calving, attracted the attention of many veterinary surgeons to the use of "Calten" in cases that relapse after milk fever; it was, however, stressed that in acute cases both calcium borogluconate and "Calten" should be administered together.

Also prominently displayed on the stand was the new swine erysipelas adsorbent vaccine. Many practitioners spoke of the successful use of this vaccine and only a very small number of failures have been reported.

"Parabortine," another new Bayer product, aroused considerable interest amongst veterinary surgeons as to its use in infectious infertility. Its method of introduction in the form of pessaries *per vaginam*, its ability to penetrate into lymphatic tissue and its activity against a wide range of bacteria, particularly their negative organisms, demonstrated the usefulness of this form of treatment. "Parabortine" has also been used in controlled trials (at present unpublished) against infertility caused by *Vibrio fetus*.

Also given pride of place were the two products "Hepmin" and "Aggrecolin," both of which have proved to be invaluable in pig practices besides their other uses. The use of "Hepmin", has shown the importance of the combination of iron and vitamin B complex in the treatment of anaemia in pigs where iron alone has failed. A definite improvement has also been observed in the growth rate of young pigs which undoubtedly were suffering from a sub-clinical condition of anaemia. Many veterinary surgeons reported the usefulness of "Aggrecolin" in cases of febrile agalactia in sows which, in many cases, were confirmed by bacteriological examination.

That excellent and economical antiseptic "Roccal" with its active ingredient benzalkonium chloride once more created a considerable amount of interest particularly in respect of the "Roccal" cream which is now available. The superiority of this quaternary compound and its bactericidal efficiency against the most common organisms met in veterinary practice are making it one of the most popular in the hands of the veterinary surgeon.

Also displayed were some of the well-known range of Bayer biologicals. These included "Susserin," braxy-blackleg vaccine and pulpy kidney serum and vaccine. The well-known taeniacide "Nemural" was also displayed along with "Novalgin," the anti-rheumatic and analgesic which is extremely useful in rheumatic conditions in the dog and colic in the horse.

Many veterinary surgeons were enthusiastic in the results they had achieved by using "Tycine" in stubborn cases of external otitis.

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Boots Pure Drug Co., Ltd., Station Street, Nottingham. This firm's exhibit again placed emphasis on the theme "Service to the Veterinary Profession" through "one transaction," ease of ordering and supply and the benefits of the retail organisation.

"Ethidium," the company's new chemical compound for trypanosomiasis, was also featured. The advantages of low dosage, absence of delayed liver damage and the apparent absence of relapse following single injection were stressed.

"Viules" being a range of drugs in handy cartridge form (as used in the recent Everest expedition) for use with the "Mitrex" syringe were also displayed. The technique has been employed by the dental profession for the administration of local anaesthetics, but for the first time in this country a wide range of other useful preparations is made available. The exhibit and literature demonstrated the possible veterinary applications and the many advantages offered by this unique presentation.

The remainder of the exhibit included the ethical range packed specially for the profession, including the new series of packs in tear-off labels, the penicillin intramammary suspension dispensing and economy packs with "own name" labels, tyrothricine ear drops and the hormone product range.

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Brookwick Ward & Co., 149, Sutton Court, W.4. [Hauptner's Veterinary Instruments and Equipment.] Together with a good selection of their well-established instruments, Hauptner's showed the Schecker clam castrator, the Ullrich mouth gag for dogs and a rhinolaryngoscope. A laboratory microscope, an electric steriliser and a hand centrifuge were amongst items which emphasised the wide range of equipment that is available to the veterinary profession from this company.

An absentee, much enquired for, was the demonstration model of a cow, which it is hoped, however, to place on show for the colleges and other interested bodies, in the near future.

The discussion on the Schecker castrator, started in Stockholm, was continued in Aberdeen and, despite unfavourable first expressions of opinion, this instrument began to find a certain favour amongst those surgeons who were impressed by its outstanding merit of safety. This castrator is now being tested under practical conditions in this country.

The Hauptner dehorning shears, a casualty at the Eastbourne Congress, has now given good service in many practices and with its new, less highly tempered blades, should prove a useful instrument in dealing with young cattle.

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Burroughs Wellcome & Co., 183-193, Euston Road, London, N.W.1. "Advances in Veterinary Medicine" summarised the theme of this exhibit which displayed a number of important new products introduced by the company over the past 12 months.

Foremost among these is "Epivax," the egg-adapted distemper virus prepared at The Wellcome Research Laboratories. The advantages of this new single injection prophylactic against distemper and hard pad disease aroused the greatest interest among veterinary surgeons. By serial passage in fertile eggs, "Epivax" has lost its virulence but retained its antigenicity. It dispenses with the need for vaccine or serum in prophylaxis, it is non-infective to susceptible animals and the injected dog is not a risk to susceptible contacts. Another outstanding feature of "Epivax" is that it is a valuable therapeutic agent in the treatment of distemper and hard pad disease. Veterinary surgeons it was felt, also would appreciate the longer "life" of the new virus, compared with ferret-tissue virus.

It was apparent that in a very short time "Themalon" has gained a unique place for itself in canine practice as an analgesic and hypnotic with advantages over morphine. Displayed along with it was the interesting new drug "Lethidrone" which cuts short the action of "Themalon" with dramatic effect.

In the large-animal field the concentrated injection of vitamin D with the recommendation of a million unit dose for all dairy cattle once during the winter months attracted much attention. Interest was also focused on the prevention of braxy, pulpy kidney disease and swine erysipelas respectively.

Outstanding amongst the literature issued at the exhibition was the attractive folder specially designed for the Congress and distributed by B. W. & Co. to all veterinary surgeons before the opening date. As in previous years, the folder featured the products to be displayed at the exhibition, a local legend and provided details of places of interest around the Congress city together with a small scale map of Aberdeen.

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Chappie, Ltd., Trading Estate, Slough, Bucks. Chappie Ltd. were again represented with a stand showing the company's four products and Mr. D. L. Martin was in attendance as usual.

During the course of the week it was announced that the company had decided that, due to the easier supply of meat, they would concentrate their activities on canning so that the products immediately available would be tinned Lassie and Kit-E-Kat, dry products, Chappie and Whiskas no longer being made.

Invitations were extended again to the veterinary profession to accept samples of the foods and to give their opinions on the products.

With the advice of Dr. Booth, the Director of Research and Development, who is a nutritionist of some eminence, Chappie have a very good idea of the value of their foods for dogs and cats.

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Cooper, McDougall & Robertson, Ltd., Berkhamsted, Herts. This stand included a display section illustrating some of the various pests of sheep and cattle.

Illustrations of liver fluke, round and tapeworms, the warble fly, stable fly and biting louse were shown above a microscopical cabinet containing illuminated specimens of the actual parasites. A model of the Cooper Technical Bureau, where much of the scientific work of the company is carried on, was also shown.

Actual products on view included Cooper's uterine pessaries, analgesic eye dressing, bloat remedy, wound dressing powder, phenothiazine dispersible powder, hexachlorethane dispersible powder and a new fungicidal dressing, supplies of which will shortly be available. Various aerosol products pioneered by the company in Great Britain, such as Cooper's Aerosol Flyspray, Fresh-aire and Moth-aire, completed the display.

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Genatosan Limited, Loughborough, Leics. Among the new products on display were preparations for the treatment of moist and dry eczema in dogs and cats. These were "Acudex," an antiseptic lotion containing astringents, "Zicthol," a cream consisting of zinc oxide. ichthammol and camphor incorporated into a water miscible base, and "Pixcyl." The last-mentioned contains the equivalent of 5 per cent. coal tar and was recommended for application in cases of dry eczema.

Well-known Genatosan specialities such as "Alvor" contagious pneumonia vaccine and "Tregor" joint-ill vaccine were also shown, together with the more commonly required biologicals such as blackleg vaccine, braxy vaccine, mixed blackleg and braxy vaccine, lamb dysentery vaccine and serum, pulpy kidney vaccine and serum, swine erysipelas serum, tetanus antitoxin and toxoid.

The latest addition to this range was an aluminium phosphate adsorbed blackleg vaccine, stated to be most reliable in use, and to produce a high degree of immunity.

"Mega" pessaries containing gentian violet in conjunction with a polyvalent vaccine and intended for the prevention of local infection following parturition were also on display.

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W. Gimber & Sons Ltd., 2, Queen's Road, Peckham, S.E.15, exhibited a complete range of instruments and sundries.

Amongst several items arousing particular interest were the "operating type auriscope," the ether/oxygen apparatus, and the sparklets aural spray.

Tube Gauze—the non-adhesive method of bandaging—again was tried out by almost every visitor to the exhibition.

The directors would like to take this opportunity of thanking all their clients for their continued interest in their products and services.

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Glaxo Laboratories Ltd., Greenford, Middlesex. Penicillin in veterinary practice was the predominating theme of this exhibit. It featured Crystapen—a crystalline sodium penicillin G which combines high efficiency of bactericidal action with low cost and convenience to the clinician. In the new 5 and 10 mega vials solutions remain stable for seven days, so that injections, prepared in advance, can be used as required. Saving of the veterinary surgeon's time was illustrated by a revolving picture enumerating the numbers and species of animals which could profit from a 5 mega vial of Crystapen.

Also shown were streptomycin and combined penicillin and streptomycin intramammary infusions, for both susceptible and resistant cases of bovine mastitis; and veterinary penicillin granules—an oral form of the antibiotic, easily miscible with solid and fluid foods—for use in the prophylaxis and treatment of some forms of intestinal disturbances in calves, pigs and puppies. Streptomycin for injection was represented by Dimycin (streptomycin and dihydrostreptomycin) and Crystamycin (combination of penicillin, streptomycin and dihydrostreptomycin).

The exhibit included also Veterinary Cytamen (vitamin B_{12} for injection), the uses of which cover a wide therapeutic field.

Also featured on the stand was Intradex blood plasma substitute, now being used by veterinary surgeons in the treatment and prophylaxis of shock in surgery and disease.

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C. J. Hewlett & Son Ltd., 35-43, Charlotte Road, London, E.C.2, and 216, Orr Street, Glasgow, S.E., had a comprehensive display of veterinary specialities and instruments including the McLintock automatic injector, which was exhibited for the first time. This instrument can be used as a hypodermic syringe for multiple injections as a pump attached to a Nielsen's catheter for intra-uterine irrigation, or as a drenching gun, for which a suitable nozzle is supplied.

The McLintock preset syringe for tuberculin testing and the instruments for the McLintock technique in rumenotomy were also shown.

Preparations worthy of note included:—

Calcium Boro-Gluconate P., P-M., and P-M-D. for the treatment of milk fever.

Duo-Phos containing 20 per cent. dextrose with double phosphorus for hypophosphataemia and acetonaemia.

Probactol containing phthalylsulphacetamide and sulphadimidine for white scour in calves, swine dysentery, diarrhoeas and dysenteries of the cat and dog involving *B. coli*, and for secondary enteric infection in canine distemper. Supplied in the form of a suspension or tablets of 0·5 gramme (7½ grains) and 5 grammes (77 grains).

I.P.S. brand penicillin sulphadimidine, a suspension of penicillin 100,000 units and sulphadimidine 1 gramme in an oil-wax basis, for cases of bovine mastitis where the infecting organisms are mixed streptococci complicated by a secondary pathogen (except *C. pyogenes*).

As sole agents and stockists of Messrs. Organon Laboratories Ltd., a complete range of their veterinary hormones was exhibited including pregnyl (chorionic gonadotropin B.P.) the luteinising hormone, in both ampoule and tablet form, and testosterone implants, for deficient sex drive.

Among the well-known and well-tried specialities also featured were "Myroxline" for mange and ringworm, "Sarcogen" for the destruction of lice and other parasites, "Hewsol," a safe and efficient germicide for all purposes, and "Parophyroxia" for colic impaction in horses.

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Imperial Chemical (Pharmaceuticals), Limited, Fulshaw Hall, Wilmslow, Manchester, featured a number of new products amongst their full range of well-known veterinary specialities.

Recent introductions on view included "Mysoline," an entirely new drug which offers a new approach to controlling nervous disorders in the dog. Clinical investigations have shown that "Mysoline" has a number of notable advantages over other drugs in common use—its high anticonvulsant activity, low toxicity and freedom from hypnotic effect. It is issued in tablets of 0·25 gramme for oral administration. "Avdet" teat bougies, though not entirely a newcomer to the range, now contain 100,000 units of penicillin (potassium salt) in each bougie. They are individually wrapped and are packed in a specially designed moisture-proof container which ensures that the full potency is retained during the storage life. These bougies offer a simple, convenient and economical form of penicillin therapy for streptococcal mastitis, abscesses, fistulae, wounds and metritis.

Other products shown included "Anavenol" K, the anaesthetic for farm animals, "Sulphamezathine," the most popular sulphonamide for routine use, the various "Cetavlon" formulations, all of which are established for their valuable bactericidal cleaning properties, together with the "Avloprocil" repository procaine penicillin preparations, "Avloprocil" A.S., "Avloprocil" N.A. and "Avloprocil" Oily Injection with 2 per cent. aluminium stearate. The new higher grade quality "Cetavlon" with which the various "Cetavlon" preparations are formulated,

became available earlier this year after much investigation. Compared with the old material it shows an increased bactericidal potency against a wide range of gram-positive and gram-negative organisms and because it is very much more soluble in water the preparation of clear, stable solutions is greatly facilitated.

The visitor's attention was also drawn to the range of "Promix" penicillin supplements. Literature dealing with the many aspects of this new development in livestock feeding, together with dosage recommendations in the various types of rations as specified by the Ministry of Agriculture, was available to those seeking further information.

"Lorexane" gamma benzene hexachloride B.P. and "Tetmosol," both valuable remedies in the treatment of mange and against other ectoparasites, received their proper recognition, together with the worm remedies, "Phenovis" (phenothiazine), "Avlothane" (hexachloroethane) and "Minel," the combined fluke and worm remedy with trace elements, for use in sheep and cattle—all claimed to be valuable aids in everyday practice.

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The International Serum Co., Ltd., The Paddocks, Frith Lane, Mill Hill, London, N.W.7. On this firm's stand was featured "Avirulin," the new avirulent vaccine for the prevention of swine erysipelas as well as their complete range of sera and vaccines which included combined dysentery and pneumonia serum for cattle, pulpy kidney serum and *Br. abortus* vaccine S.19.

Products of the Behring Works, Marburg/Lahn, included crystal violet vaccine, swine fever serum and anti-anthrax serum, whilst some of the veterinary specialities of the Farbenfabriken Bayer, Leverkusen, included Cispidon Brand of di-oxyanthraquinone, a reliable and safe purgative for all animals and Artena, an arsenical tonic and restorative for injection.

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Minsal Ltd., Victoria Works, Wincham, Northwich, Cheshire. These manufacturers of trace elemented mineral supplements for livestock exhibited their full range. In the section for cattle it was noteworthy that there were no less than four supplements offered, which were under the following headings: Cattle Minsal, Fortified Cattle Minsal, Magnesium Rich Supplements and Trace Elemented Phosphate.

The last two supplements were of particular interest to veterinarians, as the magnesium rich supplement was recommended prophylactically for hypomagnesaemic conditions, whilst the other, trace elemented phosphate, is intended for use in herds with a breeding problem of a non-infectious type.

Supplements for sheep, pigs, poultry and horses were also shown.

With regard to mineral licks, it was noted that all four grades of supplement for cattle, and also the sheep supplement, were offered in lick form, in circular and rectangular shapes, thus showing that it is possible to obtain complete mineral supplements in this form, which is quite different from the more orthodox mineral lick which consists essentially of salt. A special feature of the Minsal licks is that they are treated to withstand adverse weather conditions.

Perhaps the outstanding feature of their exhibit was their fully trace elemented minerals for pigs and poultry, to which had been added procaine penicillin. It is a well-known fact that penicillin is most unstable in the presence of trace elements, but Messrs. Minsal Ltd. have overcome this obstacle by instituting a new process of stabilisation. The application of this idea might well do much to overcome the stability of the antibiotic in compounded feeding mixtures.

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Newton Victor Ltd., 15, Cavendish Place, London, W.1. This firm's stand at the Aberdeen exhibition again featured a range of X-ray and electro-medical equipment for veterinary service.

The applications of heat therapy in both large- and small-animal practice are immensely facilitated by the inductotherm short-wave diathermy apparatus—the original inductive generator of deep, penetrating and soothing heat in a form particularly well tolerated even by the most nervous animals. Together with the inductotherm, Newton Victor exhibited the "K-5" portable veterinary X-ray unit, an equipment of great compactness and simplicity of operation yet offering an astonishingly wide range of dependable, on-the-spot, radiographic and fluoroscopic service. The mobile version of the same apparatus—the "K-5-15" unit—for surgery and clinic use was also shown.

In addition there was displayed a range of allied X-ray accessories and supplies—with special emphasis upon the Dufay Victor brand of X-ray film, now fully available in three alternative emulsion-speeds. All in all, this proved a most interesting and informative display.

Pharmaceutical Specialities (May & Baker) Ltd., Dagenham, Essex. This firm displayed a wide range of their veterinary products, amongst which were the following:—

"*Entramin*" *brand 2-amino-5-nitrothiazole*.—This preparation is still, as formerly, available in premix and capsule form, but is now also presented in the form of a solution for the medication of drinking water. "Entramin" is intended for the prevention and treatment of entero-hepatitis in turkeys.

"*Dibrogan*" *Cream*.—This recent development embodies promethazine and dibromopropamidine, thus combining antihistaminic, analgesic, and antiseptic properties. Primarily intended for surface application in allergic states in which it will usually produce marked relief from irritation and itching, "Dibrogan" Cream is also indicated in the treatment of wounds, burns, abrasions, and insect bites.

"*Trinamide*."—This association of sulphonamides consists of equal parts of sulphamerazine, sulphadiazine, and sulphapyridine, and is indicated in the treatment of bacterial infections due to susceptible organisms.

"*Anthisan*" *and* "*Phenergan*."—These compounds, which are mepyramine maleate and promethazine hydrochloride respectively, find a wide range of application in states associated with abnormal histamine release, and have certain valuable secondary pharmacological properties.

"*Protegan*."—"Protegan" brand dibromopropamidine and sulphathiazole is a suspension of dibromopropamidine isethionate 4 per cent. and sulphathiazole 1 per cent. in oil/wax, for the treatment of bovine mastitis due to staphylococci and certain penicillin-resistant streptococci.

"Protegan" suspension is also presented in combination with 50,000 I.U. of the potassium salt of penicillin for the treatment of both penicillin-sensitive and penicillin-resistant forms of mastitis, *e.g.*, streptococcal, staphylococcal and coliform.

"*Compron*."—"Compron" (sulphanilamide and sulphapyridine) pessaries are effective in the treatment and prevention of *post-partum* infections in both cows and mares, especially in cases of dystokia, retention of the placenta, etc.

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Rickett & Colman, Ltd., Pharmaceutical Department, Hull, featured the following preparations:—

Dettol Antiseptic.—Efficient, non-poisonous and non-staining. Well tolerated on the skin and mucous membranes.

Dettol Obstetric Cream.—The equivalent of 30 per cent. Dettol in gum tragacanth. Water soluble.

Instrument Dettol.—Specially formulated for the disinfection and storage of surgical instruments. It provides a clear solution with soft or distilled water or with surgical spirit.

Dettol Ointment.—An actively antiseptic ointment incorporating the active principle of Dettol.

Surgical Dettol.—For pre-operative skin disinfection. Rapidly bactericidal. Available coloured blue and orange.

Disprin.—Each tablet contains 5 grains of acetylsalicylic acid and 1½ grains of calcium carbonate, with citric acid. When placed in water Disprin tablets effervesce and the acetylsalicylic acid is dissolved and substantially neutralised to form a solution of calcium aspirin.

Codis.—Provides soluble aspirin together with codeine phosphate and phenacetin. Each tablet contains 4 grains of acetylsalicylic acid, 4 grains of phenacetin, 0·125 grain of codeine phosphate, together with calcium carbonate and citric acid. When placed in water the tablets effervesce and disperse in 20 to 25 seconds, to form a solution of calcium aspirin and codeine phosphate with phenacetin in fine suspension.

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Willington Medicals Ltd., Whitchurch Road, Shrewsbury. Specialists in the supply of all requirements of the veterinary profession, this firm confine their activities to this work.

They have a comprehensive range of goods of their own manufacture, they offer a complete range of sera and vaccines, and have an extensive dispensing service to practitioners' own formulae, packed and labelled as required.

This year, they introduced in association with Consolidated Chemicals Ltd. a new range of ethical pharmaceuticals:—

"*Adadrin*."—It is stated that this analeptic in cardiac circulatory and respiratory affections, rapidly tones up the system and has an antispasmodic action on the bronchi; also that is a specific against coma in cattle.

"*Hepacon B Forte*."—This agent increases haemoglobin levels significantly by administration by injection of B_1, B_{12} and folic acid in sterile liver extract. It is claimed to be of great value in piglet anaemia: recommended as a prophylactic.

"*Hepacon Plex*."—A vitamin B_1 complex preparation for intramuscular injection.

"Hexorate."—Injection of hexamine camphorate for hard pad in dogs; leptospirosis, post-distemper nervous conditions, cystitis, etc.

"Nor Bis."—Granules for the treatment of toxic gastric and intestinal ailments; dysentery; mucous colitis. Bismuth subnitrate in colloidal kaolin—charcoal base.

"Nu Phosan."—Phosphorus tonic (parenteral administration) for stimulation of the metabolic processes.

"Progal" Skin Lotion.—Stated to be an ideal non-irritant skin tonic; excellent for use in small-animal practice. Chlorbutancresol oil/water suspension.

"Protinex."—Standardised Biotin—powdered preparation of vitamin H. Excellent general tonic for dogs, cats, etc.

"Protinex T."—As above, but with trace elements added.

"Vetropressin."—Pituitary posterior lobe extract.

"Vitabion."—Vitamin B_1 injection.

Descriptive literature was available at the Congress, and gladly will be sent to any members on application; also stock and quotations.

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Willows Francis Pharmaceutical Products Ltd., 73, 75 and 89a, Shacklewell Lane, London, E.8. Willows were pleased to welcome their many friends in the veterinary profession to their stand at the Annual Congress of the B.V.A. in Aberdeen.

In addition to their usual comprehensive range of galenicals, sundries, etc., instruments in most general use were on show.

Xylotox, in its new and improved form, was prominently displayed and favourable reports were received on the varied uses to which this preparation could confidently be put by the profession.

"Penidural" (300,000 units of dibenzylethylenediamine dipenicillin G in an oral suspension), a product of John Wyeth & Brother, Ltd., was introduced as a preparation for veterinary consideration after being proven in the medical field.

The Hauptner 30 c.c. multi-dose syringe figured prominently in the display and was favourably received.

The "Perpendo" take-apart hypodermic syringe—also a product of Hauptner's—provided interest and favourable comment.

Ward Blenkinsop—also accommodated on this stand—staged an interesting display of their preparations which included Penotrane, Steravite, Octaphen, Pavacol and Viacutan, recently reported in *The Veterinary Record* for the treatment of alopecia. Penotrane V.M.C., also featured, is a jelly presented in such a form as to allow of its being inserted directly into the cervix for the treatment of vaginitis, metritis and cervicitis.

Willows also presented items such as crystal violet vaccine, swine erysipelas vaccine, pulpy kidney antiserum, swine erysipelas serum, calf scour serum and vaccine, etc., thereby again giving assurance that they are, as always, at the command of the veterinary profession.

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[*A description of the informative exhibit staged by Mr. Norman Hole on behalf of the Ministry of Agriculture, devoted this year to the subject of Johne's disease, and which was housed in the Exhibition Hall, is given on page 749 of this issue.*]

THE DAIRY SHOW

The annual show of the British Dairy Farmers' Association which opened at Olympia the day before we went to press with this issue, attracted an entry of 393 cattle for the inspection and milk yield classes. All of them came from attested herds or were certified free from tuberculosis. There were also good entries of poultry, pigeons and rabbits. The equipment side of the dairying industry becomes more impressive each year and there was a great display of appliances, including new inventions entered for the B.D.F.A. awards.

Compared with the years before the war farmers are keeping 11 per cent. more cows and producing 31 per cent. more milk. It is reckoned that the amount of milk now being produced would require an extra 500,000 cows if yields were still at the former level. Milk production continues to rise, and the latest figures from the Milk Marketing Board show that the September sales off farms in England and Wales amounted to 117,500,000 gallons, which is 7 per cent. greater than the output in September, 1952.

THE CLOSING MEETING

(Adjourned Annual General Meeting)

Induction of Mr. Alex. Thomson as President

The adjourned annual general meeting (the closing meeting of the Congress) was held in the Music Hall, Aberdeen, on the morning of Saturday, September 12th, 1953, with the retiring President, Mr. Alistair M. Graham, M.R.C.V.S., in the chair for the first part of the proceedings.

The President: This is the closing meeting of Congress, ladies and gentlemen. The first item is to ask the Secretary if there are any matters that should be brought forward that have arisen during Congress.

The General Secretary (Mr. F. Knight): I have not received any matters, Sir, to be brought before this meeting.

The President: Are there any resolutions?

The General Secretary: None has been reported to me.

Votes of Thanks

The President: The next item is votes of thanks. I will ask Professor Robertson to propose a vote of thanks to the Lord Provost and Corporation of Aberdeen.

Professor A. Robertson (Edinburgh): Mr. President, it is for me a very great privilege, and a very great pleasure as an Aberdonian myself, to propose this vote of thanks to the Lord Provost and City and Corporation of Aberdeen. We have had, as I am sure you will all agree, a wonderful week and many people have played a part in making it so pleasant, but I think it would be true to say that the Lord Provost and the Corporation have played a memorable part.

The Lord Provost came himself in person to give our meeting a start off and he mentioned then that Aberdeen should give consideration to the possibility of erecting a statue not only to the domestic animals but also the veterinary surgeons who attended them. We might reciprocate on this occasion and say that if we ever feel like adorning our headquarters with statues we should keep in mind the claims of Aberdeen, which has given us one of our most memorable Congresses. (Applause.)

The Lord Provost gave us a rousing start off. He got us all on our toes, as it were, and, speaking for myself, I have been there ever since when not on those of some of the ladies!

On Monday evening at the beach ballroom we had a really outstanding occasion—a beautiful setting, a fine reception, and everyone enjoying themselves immensely. Then, of course, there was a luncheon to the members of the local committee, when we were hospitably entertained by the City Fathers. Last, but not least, I have to mention the fact that we have had the use of this hall and of the adjacent hall for the exhibition and of all the various ancillary services—catering and so on—all of which have gone to help to make this Congress the success it has been.

I think we can truly say, ladies and gentlemen, in spite of what is said about it by its inhabitants and in spite of the claims of a larger metropolis in the south to the title, that in our experience Aberdeen is no mean city. (Applause.)

I have great pleasure, therefore, in asking you to accord this very hearty vote of thanks.

The vote was carried by applause.

The President: The next vote of thanks is to the readers of papers, the openers of discussions, chairmen and recording secretaries and those responsible for films, etc., and I ask Mr. Robson to propose this vote of thanks.

Mr. W. J. B. Robson (Chairman, Congress Committee): Mr. President, ladies and gentlemen, it is very obvious, I think, to most people that a Congress such as this cannot be run successfully by the Provisional Committee only: many others are required to co-operate. We have been extremely fortunate on this occasion to have had wholehearted co-operation from various people and I have very great pleasure in asking you to accord a very hearty vote of thanks to the readers of papers, including Dr. S. F. Scheidy, of West Point, Pennsylvania, U.S.A.; to the openers of discussions; to the chairmen and recording secretaries; to the Rowett Research Institute, especially the director, Dr. Cuthbertson, and the deputy director, Dr. Phillipson; to the North of Scotland College of Agriculture, especially Mr. Soutar and Mr. Shanks; to Messrs. Robert Lawson & Sons for the very excellent facilities and hospitality on Tuesday afternoon; to those responsible for the showing of films of surgical interest on small animals and animal health in the Middle East and to the Ministry of Agriculture and Fisheries for the excellent specimens.

Without the wholehearted co-operation of those various individuals and bodies this Congress would not have been the success which I think it apparently has been. I would ask you to accord to those I have mentioned a very hearty vote of thanks.

The vote was carried by applause.

The President: The next vote of thanks is to the President and members of the North of Scotland Division for their hospitality at the "at home" on the eve of Congress and for the assistance given by members of the Division in the work of the Provisional Committee In addition, there are those who provided us with much enjoyable entertainment on Thursday evening. The vote of thanks includes the Provisional Committee, for organising the Congress, and especially the Chairman, Mr. Robson, and the Local Secretary, Dr. Alastair Greig, and finally the Press for the excellent manner in which they have supported the Congress.

That is the general outline of this vote of thanks, but I should like to make a little detailed reference to some of the people concerned in the Provisional Committee and to the members of the North of Scotland Division. First of all, I should like to thank the members of the North of Scotland Division for the wonderful evening, the wonderful send off, they gave to this Congress on Sunday night. I think they set the standard on that occasion and created an atmosphere of good fellowship and enthusiasm that has been maintained right through. I do feel that the Division has put in a great deal of work on our behalf and we are very, very much indebted to them for their hospitality and kindness to us.

Later in the week, on Thursday night, they gave us a magnificent Scottish "at home," and all of you who were there did enjoy it. I think that set the seal on their organising ability, generosity and versatility.

Presentation to the Hon. Local Secretary

In all of these matters (the President continued) there were two figures who stood out. That is the Chairman of the Organising Committee, Mr. Robson—(applause)—and the Local Secretary, Dr. Greig. (Applause.) For months both of those gentlemen have put in a great deal of hard work and I am sure that in their innermost selves they must feel very proud that they have made such a success of this Congress, because the organisation of it to a great extent depended on them, and I know by what I have seen and heard this week that everybody has enjoyed it, and we are very much indebted to them.

Now I should like to say this, that although those two shouldered the main responsibilities, and the others played their parts so manfully and well, Dr. Greig had more duties than perhaps anyone else to perform because he was the local secretary and he had to make the arrangements. He has been a very busy man during the past few weeks. I think I ought to let you into a little secret. First of all, he became a Ph.D., then he organised this Congress, locally at least, and last, but by no means least, he got married. (Applause.)

Any man who can do all those things in a matter of a few weeks is a wonder man. That is what he has proved to be and I think we cannot let this occasion go by without giving him a little memento of our Congress in Aberdeen.

Therefore I have great pleasure in presenting to you, Dr. Greig, and to Mrs. Greig, this very handsome chair—what could be more appropriate after your labours—and I hope you will have a lot of pleasure, both of you, in sitting in it and also that in years to come when you use it you will think of this happy week in Aberdeen and of the big part you played in the success of this Congress. (Applause.)

Dr. Alastair Greig (Local Hon. Secretary, Congress Committee): Thank you very much, Sir, for your kind words, and you, ladies and gentlemen, for your applause. We have certainly had a busy year or 18 months of preparation, but nevertheless it has been a most enjoyable experience, and the fact that people here seem to have enjoyed the Congress is true reward for anything that we in Aberdeen may have done.

To that reward, Mr. President, you have added another —and a most handsome one. Nothing more appropriate could have been selected, for at the moment I confess I am just a little weary and would willingly sit back in the dunlopillo and rest awhile! I know, too, that my wife will be delighted to see this most attractive item of furniture added to the rather few other pieces that we have so far been able to collect together.

Perhaps it may be thought that, having been through the mill, I am now in a position to offer a few words of advice to others who may follow in my footsteps as the local secretary of a congress. All I would say is that the most important thing of all is to make sure that your Division surrounds you with a committee willing to take the load off your shoulders—and also one that knows the right people!

We in Aberdeen have had such a committee, a wonderful committee, and all I have had to do is to say "Such-and-such has to be done. Who will see to it?" and at once there has been a volunteer, either to do the job himself, or else to enlist the services of the right person. Every member of the local committee has pulled his full weight most enthusiastically and with complete unanimity—we have been a very happy committee. That is how things have been done in Aberdeen, and if you are satisfied with the results, that is all we could wish for. Thank you all very much. (Applause.)

The President: I know you would like to wish Dr. and Mrs. Greig a very long and happy married life. (Applause.)

Mr. W. J. B. Robson: Mr. President, I thank you for your very kind and complimentary remarks to myself and Dr. Greig, the secretary, and I should like publicly to express my appreciation to each and every member of the local sub-committee. Each one has pulled his weight tremendously. It might be invidious to mention individuals, but I think my colleagues will take no exception if I mention the name of one in particular, that is Mr. George Argo. It is wholly and entirely through his influence that the facilities and excellent services we obtained in all departments of the Northern Hotel were due, as well as the catering facilities in the music hall and on the local excursion to Mill of Craibstone. It was through his influence also that the ladies were able to visit Grandholm Mills, and our only regret is that on that occasion the numbers had to be limited.

Ladies and gentlemen, I can only, on behalf of the committee and myself, thank you very much for your most appreciative response to the vote of thanks proposed by our President. (Applause.)

Greetings from Delegates and Visitors

The President : At the opening of Congress I said we should give an opportunity to any delegates or visitors from overseas to bring greetings from their organisations. I do not know if there are any gentlemen here to-day, or ladies, who would like to do that.

Mr. C. J. R. Gorrie (Australia) : I appreciate the opportunity of conveying greetings from Australia. We in Australia have a great affection for Britain, and the Australian veterinarian has a great affection for the British Veterinary Association. Therefore, it is very easy for me to convey sincerely, first, the best wishes of the Australian Veterinary Association and also greetings from Mr. H. R. Tinney, who is our President this year. Many of you will know him.

This is also a personal matter in which Mr. Clay wishes to be joined with me. We have been most interested in everything that has gone on and have been very impressed with the scientific sessions.

Regarding the social arrangements, we must of course include the North of Scotland Division, and we can only say that we have been overwhelmed—and when I say overwhelmed I mean overwhelmed. I can assure you that we shall never forget the B.V.A. Congress in Aberdeen. (Applause.)

Colonel Maurice W. Hale (U.S.A.) : It is my pleasure to bring greetings from the officers and 15,000 members of the American Veterinary Association to their colleagues in the British Veterinary Association. As an individual, besides in my official capacity, I should like to congratulate all committees and everyone who had anything to do with arranging the programme for this Congress, which I think is one of the best I have ever attended. (Applause.)

Mr. C. V. Dayus (New Zealand) : I have the honour to represent His Excellency the High Commissioner of New Zealand, and I should like to express sincere thanks for the very kindly invitations and the several courtesies and generous hospitality that have been extended to me during my visit to Aberdeen.

I should like to join with the other speakers, Sir, in congratulating you on the organisation of a very successful Congress, both from the technical and the social side.

Coming from a country—if I may digress for just one moment, Sir—where the meat inspection services are in the hands of a government department, organised by the veterinary personnel, I was very interested indeed to hear the remarks of Lady Tweedsmuir on the opening day and your remarks in your presidential address.

The meat inspection service in New Zealand is probably one of the best in the world. It is uniform throughout the country, and whether the meat is for export or local consumption it is under the control of veterinary personnel. We have heard of several instances in the United Kingdom where the meat inspection services were inadequate and where the control was not under veterinary personnel. I feel certain that that state of affairs should not be countenanced by the community or the veterinary profession, and I should like to express myself wholeheartedly in sympathy with the attitude that has been adopted by the British Veterinary Association to get this unsatisfactory position rectified.

I have the privilege of representing the New Zealand Veterinary Association at this meeting and there are two other members here, and I am sure they would both wish to join me in extending to you very cordial greetings from the President and Council and members of the New Zealand Association. The New Zealand Association, in the most southerly part of the British Empire, has the honour to be affiliated to the B.V.A., which it is delighted to look upon as the parent body.

I should like to express my pleasure in being able to return and join with you in my own right as a member of the British Veterinary Association of some 30 years' standing, and I thank you again for all the kindness and courtesy you have extended to me. (Applause.)

Mr. D. D. Ogilvie (Manchester) : I have been asked to convey to you, Sir, and to the British Veterinary Association, the greetings of the Turkish Veterinary Association. Mr. Fikret Akin had hoped to convey these greetings personally, but having studied the English language for a period of one year, and having become reasonably proficient at it, he decided last night, after a week here, as he told me, that we do not speak English. (Laughter.)

It is an honour for me, therefore, on his behalf, to convey these greetings from the Turkish veterinary profession because I do know that since the transition of Turkey from the eastern side of the world to the western, as it were, the Turkish veterinary profession looks increasingly to us for inspiration and for guidance as to its future.

Turkey as it stands, with one foot in Europe and one foto in Asia, holds a great strategic position. It is developing quickly especially in the livestock field largely through the efforts of its veterinary profession. Therefore, I ask you to accept, Sir, these greetings which come to you from our Turkish colleagues over nearly 2,000 miles. (Applause.)

Mr. John Gray (Students' Union Society) : On behalf of the veterinary student societies of Great Britain, I should like to say how very glad those societies were to receive invitations from the B.V.A., and I must say, ladies and gentlemen, the delegates who were appointed to come here have enjoyed themselves. It has been most interesting to watch the Congress in action and I am sure that we have learnt a great deal from it.

I should like to take this opportunity of inviting members to our respective College Balls. These are advertised in *The Veterinary Record* each year and a cordial welcome is extended to you to attend them. (Applause.)

The General Secretary then read the following letter from Mr. R. H. Heywood (Australia), which was greeted with applause.

Dear Mr. Graham,

In case I am unable to attend the closing meeting on Saturday, may I now say how greatly I have appreciated being able to take part in yet another Congress of the British Veterinary Association.

It is indeed a privilege. May I say also that my wife and I have enjoyed the generous hospitality of the Association nowhere more than in Aberdeen. Never again will we be able to give any credence to the stories which we may hear that cast the least doubt on the generosity of Aberdonians.

With kind regards,
Yours sincerely,
R. H. Heywood, B.V.Sc.

Induction of New President

The President : We now come to the most important part of these proceedings and that is the induction of the new President, but before we undertake this I should like to say a few words.

First of all, I must thank you, all of you, for the very loyal support that you have given me during the past year. I am thinking particularly in that connection of the chairmen of committees and members of our Council, and particularly, too, of our officers, especially those who are retiring from

office this year. I refer to two very great stalwarts, Mr. A. J. Wright and Mr. Hebeler. (Applause.)

When you are in office, ladies and gentlemen, and you have two gentlemen like that at your side I can assure you that you cannot go far wrong. They have been a very great help to me indeed. We are very sorry to lose them, but they will still be very active members of this Association.

Now during the past year we have had a pretty strenuous time, and there have been many problems and difficulties which have arisen, some of which at least we have been able to solve or overcome. In this connection I would thank a number of self-sacrificing individuals who perhaps do not appear in the public eye a great deal but who do a vast amount of work for this Association, which is often unknown except to a few at headquarters. I can assure you, ladies and gentlemen, that you have no idea of the amount of work some of these people do and we owe a great debt to them.

For me the past year has been a very memorable one and one which I shall always remember. It is a very great honour to undertake the leadership of an Association such as this, but it is no light task and although I shall look back on it with pride I shall be quite relieved to lay down the responsibility of office and to pass it on to somebody well qualified to take it over.

Before doing so, however, I should like to thank my colleagues in the Animal Health Division for all the support and encouragement they have given me throughout the year, and I include in that those right at the top of the Division down to the most junior man in it. They have supported me through thick and thin and it has been a very great help to know that they were behind me.

I know it is customary, and I feel I must thank my wife for the way she has helped and encouraged me. (Applause.) Ministry wives are long suffering and used to frequent absences of their husbands, but when B.V.A. duties are added to Ministerial ones I think that even they begin to wonder what is afoot. I think my wife will be quite pleased to see me a little bit more than she has done during the past year.

It is now my great pleasure to induct into the high office of President Mr. Alex. Thomson, and in doing so I know we have chosen a man of character and ability who will bring honour to this Association.

Mr. Alex. Thomson, in placing this gown and chain of office on your shoulders I do so in the fervent hope that you will have a highly successful year of office, and it gives me great pleasure to be the first to congratulate you on taking over the presidency. (Applause.)

Mr. Alex. Thomson, having been duly inducted, replied: Thank you again, Mr. Graham, for the very flattering things you say about me. If it were not for the fact that there is no one more conscious of his shortcomings than I am, I might believe them to be true. I know, however, from my experience with you as President of this Association and now as its Senior Vice-President that you are sincere. And for that reason I accept my task, knowing it to be that. Any little experience which I have gained in the past is at the service of the Association. I am surrounded by wise counsellors, both in the executive and in Council and you, Sir, will be my chief guide and friend. It was with that knowledge that I accepted the honour you have done me. You have filled this office with distinction and dignity. With kindliness you have dealt fairly and firmly with the many problems which have come your way. And you have grown in stature and affection in the eyes of our members. And I can only hope that in saying thank you to you, you can fully appreciate the measure of our feeling.

And now a word about the two officers who are unharnessed to-day: the Senior Vice-President—Alan Wright—and the Hon. Secretary, Mr. Hebeler. Mr. Graham has already referred to them, but I should like to add a little more. This Association has been served by many willing servants, but none I am sure has given of his time and energy more willingly. Zest and enthusiasm alone, however, are not enough and they brought in addition wise counsel to every problem. We are, however, fortunate in that we will retain their services in other capacities and so they are not being turned out to grass and forgotten but resting only for a short space and, knowing their worth in the past, I will certainly use them either to plough or harrow.

To them I would, on your behalf, say "Thank you and well done." (Applause.)

That is all the formal business of this Congress, and I now declare it closed.

Victoria Veterinary Benevolent Fund Ladies' Guild

ANNUAL GENERAL MEETING AT ABERDEEN

The 22nd Annual General Meeting of the Ladies' Guild was held in the Music Hall, Union Street, Aberdeen, on September 8th, 1953, at 10.15 a.m.

The President, Mrs. C. L. Graham, welcomed the following ladies: Mesdames Adamson, Argo, Barrett, Forgrave, B. Greig, C. Greig, Glover, Hastie, Hart, Hebeler, Hill-Owens, Holroyd, McFaddon Jones, Jennings, Ingram, Kennedy, Mitchell, Mackenzie, McLean, Ogilvie, Robertson, Robson, Ritchie, McQuaker, Stanmor, Smith, Swaby, Service, Sambrook, Steele-Bodger, Sangster, Thompson and Wilson.

Apologies for absence.—Letters of apology were received from Mesdames G. H. Wooldridge, M. Simpson, Olivier and Dall.

Hon. Secretary's Report

The Hon. Secretary, Mrs. Hill-Owens, gave a résumé of the year's work. It had been another year of sadness for the Guild, several members mourning their loved ones and others experiencing trying times through severe illness in their families. The sympathy of the Guild was extended to the homes of everyone of these and replies had been received.

The report proceeded: "It is our pleasing duty to place on record the Guild's indebtedness to the services rendered this year by the Local Ladies' Committee of Aberdeenshire, especially mentioning Mrs. Service, of Ellon; also Dr. Alastair Greig, of Bucksburn, for invaluable help. Mrs. Service was asked to convey to the Ladies' Committee and Dr. Alastair Greig the Guild's heartfelt thanks.

"The President, Mrs. Graham, was thanked for her year of office, and Mrs. Glover for the faithful services she was still rendering to the Fund. The Ladies' Guild again gratefully acknowledge the help from B.V.A. headquarters, 36, Gordon Square, and from those of the V.V.B.F. at 10, Red Lion Square.

"We acknowledge our indebtedness, also, to our Hon. Auditor, Professor Wright, of Liverpool, who so kindly undertakes this work for us and has done for many years.

"To all ladies who have played their part once again this year we officers give our grateful thanks to one and all for your generosity, helpfulness and self-sacrifice.

"For the ensuing year, may the warm fellowship of the ladies of the profession be increased, knowing that our work is so highly appreciated by all the recipients."

Election of Officers

The following ladies were then elected to the various offices for 1953-54:—

President.—Mrs. R. E. Glover.
Vice-President.—Mrs. C. L. Graham.
Hon. Secretary.—Mrs. Hill-Owens.
Hon. Treasurer.—Mrs. R. E. Glover.
Committee.—Mrs. Wright, Mrs. Matthews, Mrs. Ritchie, Mrs. King, Mrs. W. O. Jones and Mrs. Thompson.
Hon. Auditor.—Professor J. G. Wright.

Hon. Treasurer's Report

Once again we have had a very good year and the balance at the bank is £900. The two main contributors this year are the Scottish and Irish Branches. A very real and special vote of thanks is due to them.

The following items are of particular interest and were among the amounts received:—

	£	s.	d.
Irish Branch:—			
Proceeds from visit to National Stud, Tully, Co. Kildare (by kind permission) ...	10	5	0
Proceeds from collection at V.M.A.I. Golf Competition Bundoran	5	12	6
Proceeds from Ladies' Guild Dance and Raffle	37	6	0
Proceeds from Raffle, Veterinary College of Ireland Students' Union Dance	17	14	4
Proceeds from Veterinary College of Ireland Students' Union Dance	126	2	6
Northern Ireland	14	5	0
North Wales	5	15	6
South Wales, Proceeds of Sweep on the Derby	32	16	0
Lancashire and Cheshire	17	6	6
Dance and Raffle at Harrogate	157	1	3
Mrs. G. H. Wooldridge	6	10	0
Scottish Branch Subscriptions and Donations	90	12	6
Ayrshire Dance arranged by Mrs. Stewart ...	85	18	6
Dumfries Dance arranged by Mrs. Sangster ...	83	0	0
Penrith Dance arranged by Mrs. Barr	74	0	0
North Scotland Division, by Mrs. Service ...	75	0	0
	£839	5	7

Allocation of Money

It was resolved to allocate the following sums:—

	£	s.	d.
National Veterinary Benevolent and Mutual Defence Society	50	0	0
V.V.B.F. Donation for Current Relief ...	300	0	0
V.V.B.F. Donation for Christmas and Summer Gift Fund	500	0	0
	£850	0	0

XVth INTERNATIONAL VETERINARY CONGRESS STOCKHOLM—1953

RESOLUTIONS

I. *Fight against epizootics on an international level.*

"The XVth International Veterinary Congress recognises the necessity for an energetic campaign against epizootics and supports all efforts to establish an international co-ordination of this fight.

"The increasing overlapping of international activities during the past few years constitutes for member-states not only a severe financial burden, but also tends to impair the efficiency of all measures taken in this field.

"Hence, the XVth International Veterinary Congress is of the opinion that the tasks resulting from the international fight against epizootics should be organised in the main through the OIE and the FAO within the framework of their mutual agreements.

"The Permanent Committee for the International Veterinary Congresses is instructed to co-operate with the international organisations concerned."

II. *Revision of the Statutes of the Permanent Committee for the International Veterinary Congresses and of the By-Laws of the International Veterinary Congresses.*

"The XVth International Veterinary Congress instructs the Permanent Committee to prepare for the XVIth International Veterinary Congress in 1957 a draft revision of the statutes of the Permanent Committee and of the By-Laws of the International Veterinary Congresses.

"The Permanent Committee should consider whether a World Federation of Veterinarians in the form of an International Union is desirable."

III. *International standardisation of biological products.*

"Recognising the need of urgent action to establish international standards for biological products for veterinary use, the XVth International Veterinary Congress welcomes the extension of the work of the Committee on Biological Standardisation of the World Health Organisation to include such products. It suggests that this Committee be encouraged to extend as soon as possible its work towards the provision of international standards for other suitable veterinary substances, those meriting immediate attention being the *Cl. welchii* (*Cl. perfringens*) antigens, beta and epsilon and swine erysipelas antiserum. The XVth International Veterinary Congress also welcomes the work of the OIE on the study of biological products for use in the control of animal diseases and suggests that the Office be encouraged to continue its activities on this subject."

IV. *Establishing suitable post-graduate scholarships in the field of veterinary parasitology.*

"In view of the heavy losses arising from parasitic infestations of livestock and the dearth of trained parasitologists throughout the world, the XVth International Veterinary Congress urges the Permanent Committee to seek the co-operation of OIE and FAO, and national and international veterinary bodies to establish suitable post-graduate scholarships in this field.

V. *Information on preventive and curative treatment of parasitic diseases and the practical control of these diseases.*

"On the proposition of the Committee on the Control of Parasitic Diseases, the XVth International Veterinary Congress recommends co-operation to the fullest possible extent with OIE, FAO and other agencies in determining the distribution of the important parasitic diseases of

livestock throughout the world, in making available to the veterinary profession the latest and most authentic information on preventive and curative treatment of these diseases and in encouraging the practical control of parasitic diseases throughout the world."

VI. *Distribution of the reports of the Congress.*

"The XVth International Veterinary Congress urges the Organising Committee of the next Congress to make every effort to see that the reports of the papers to be presented at that Congress are in the hands of all delegates at least one month before the opening date of the Congress."

VII. *Veterinary education regarding physiology and pathology of reproduction and lactation.*

"As the prevention and treatment of disturbances in reproduction and lactation and artificial insemination of domestic animals have developed into especially important branches of veterinary science and practice, the XVth International Veterinary Congress recommends that veterinary schools should ensure that students receive adequate instruction in this branch of veterinary work."

VIII. *International Animal Production Organisation.*

1. "In view of the vital contribution which the veterinary profession can make to the important field of animal production, the XVth International Veterinary Congress recommends the formation of a special Animal Production Organisation to deal with Animal Breeding, Animal Nutrition and Animal Husbandry in relation to animal health and animal productivity.

2. "This Animal Production Organisation should be affiliated to the International Veterinary Congress Organisation and should have representation on the Permanent Committee."

IX. *International exchange of veterinarians.*

"The XVth International Veterinary Congress proposes that the veterinary organisations of the different countries should organise an exchange of veterinarians in different fields of activity for the purpose of study, gaining practical experience and establishing personal contacts."

X. *The use of vaccines in the fight against infectious diseases and epizootics.*

"The XVth International Veterinary Congress recommends that, when choosing a process of immunisation with a view to combating an infectious disease, preference is given to vaccines composed of germs or viruses killed or made inactive, so that they are totally inoffensive. Living germs or viruses, attenuated or not, should not be used unless no other immunising method of sufficient value exists.

" In that case, the so-called 'living' vaccines shall not be used generally unless a profound experimental study has proved the stable character of the viruses of which the vaccines are composed, and has precisely determined the risks which their use involves. The possession and the use of these vaccines should be reserved exclusively to veterinarians."

XI. *Food hygiene and public health.*

1. "The XVth International Veterinary Congress—in view of the importance of veterinary work for public health and public economy—recommends an increased participation of veterinarians in public health and agricultural administrations, especially for combating zoonoses, for the supervision of victuals and for the study of other questions of current interest for human and animal health.

2. "As the value and effect of the supervision of victuals depends on the technical training of the supervising veterinarians as well as on their participation in the framework of the administration, it is desirable that in all countries a special training of professional veterinarians takes place in the field of the manufacture and supervision of victuals of animal origin.

3. "As an important part of food poisoning is caused by human permanent excreters of salmonella-bacteria, suitable measures for the removal of germ-carriers from the food trade should be aimed at in all countries.

4. "WHO, FAO, OIE and other international organisations should support individual countries by technical consultation and through the development of international standardised methods of research in the field of zoonoses and food hygiene and in this way facilitate the training of veterinarians for the public health service."

XII. *Control of rabies.*

"The XVth International Veterinary Congress recommends that international organisations such as WHO, FAO and OIE should provide all possible technical and material assistance to countries where rabies is enzootic, in an intensified effort to control and eradicate this disease by the application of well-proven sanitary measures combined with mass immunisation of dogs with a vaccine of proved potency, reinforced, where necessary, by wild-life reduction programmes."

QUESTIONS IN PARLIAMENT

Slaughterhouses (Siting) (Scotland)

Captain Duncan (October 20th) asked the Secretary of State for Scotland whether the Committee he set up to investigate the siting of slaughterhouses in Scotland has yet reported; and what recommendations it has made.

The Secretary of State for Scotland (Mr. James Stuart): The Committee are still receiving written evidence from interested organisations and are in course of taking oral evidence from those who have submitted written statements. It is not yet possible to say when the Committee's report may be expected.

Captain Duncan: Is not my right hon. Friend aware of the urgency of this matter, and could he have a word with the Committee with a view to hurrying up their procedure?

Mr. Stuart: I think they are making good progress.

Slaughter of Horses (Report)

Sir T. Moore (October 20th) asked the Minister of Food whether he has yet considered the Northumberland Report on the Slaughter of Horses; and to what extent, and when, the Government propose to implement its recommendations.

Major Lloyd George: I am considering the Report in consultation with other Ministers concerned. I will make a statement to the House as soon as possible.

Cattle Slaughtering (Jewish Method)

Mr. G. Williams (October 21st) asked the Minister of Food if he is satisfied that the standing instruction of January 1st, 1950, that the slaughter of cattle by the Jewish method should be allowed only at those places where local Jewish communities have installed an approved casting pen, is being carried out.

Major Lloyd George: Yes.

Condemned Meat (Public Consumption)

Mr. Awbery (October 21st) asked the Minister of Food if he is aware of the potential dangers to public health arising from his recent action in sanctioning the sale by public auction of condemned and inedible meat and offals from slaughterhouses throughout the country; that there is no statutory obligation on the purchaser to remove the danger by a method of processing; that the meat can be taken from one authority to another to be sold for human consumption; and if he will take steps to discontinue this dangerous practice and have the meat processed in such a way as to render it harmless before it is sold by auction.

Dr. Hill: This meat and offal is stained green before dispatch from slaughterhouses. It would be an offence under the Food and Drugs Act to sell or offer to sell such meat for human consumption, and I have no evidence that any such sales have taken place.

NOTES AND NEWS

Diary of Events

Oct. 31st.—Meeting of the Society of Women Veterinary Surgeons, in the Veterinary Hospital, Pembroke Gardens, Liverpool, 2.30 p.m.

Nov. 5th.—Meeting of the Central Veterinary Society at the Royal Veterinary College, London, N.W.1, 6 p.m.

Nov. 6th.—Meeting of the Yorkshire Division, B.V.A., in the Department of Agriculture, The University, Leeds, at 2.30 p.m.

Nov. 6th.—Autumn Meeting of the Eastern Counties Division, B.V.A., at Colchester (Red Lion Hotel), 12 noon.

Nov. 7th.—Meeting of the Scottish Metropolitan Division, B.V.A., in the Royal (Dick) School of Veterinary Studies, Edinburgh, 2.30 p.m.

Nov. 27th.—Meeting of the Royal Counties Division, B.V.A., at Reading (Caversham Bridge Hotel), 2.30 p.m. (Notice follows.)

Dec. 4th.—Annual Dinner and Dance of the North Wales Division, B.V.A., at Llandudno (St. George's Hotel).

Dec. 4th.—Annual Dinner and Dance of the North Wales Division at Llandudno (St. George's Hotel), 7 p.m. for 7.30 p.m. (Notice follows.)

R.C.V.S. Membership Examinations

Nov. 6th.—Pharmacology, etc. (Revised Syllabus), Written Examination.

Nov. 9th.—Pharmacology, etc. (Revised Syllabus), Oral and Practicals (London and Dublin).

Nov. 9th.—Animal Management Examination commences at Edinburgh.

Nov. 11th.—Meeting of the Association of Veterinary Teachers and Research Workers (Scottish Regional Group), in burgh, 2 p.m.

Dec. 10th.—M.R.C.V.S. Written Examinations.

Dec. 11th.—M.R.C.V.S. Written Examinations.

Dec. 14th.—M.R.C.V.S. Oral and Practicals commence (Panels "A" and "B").

B.V.A. Council and Committee Meetings

The following are the arrangements for the next meetings, which will be held in London on Wednesday, Thursday and Friday, November 11th, 12th and 13th, 1953:—

Wednesday, November 11th

11.30 a.m. Parliamentary and Public Relations Committee.
2.0 p.m. Veterinary State Medicine Committee.
2.30 p.m. Editorial Committee.

Thursday, November 12th

10.0 a.m. Organising Committee.
12.0 noon. Home Appointments Committee.
2.0 p.m. Finance Sub-committee.
2.30 p.m. General Purposes and Finance Committee.

Friday, November 13th

11.0 a.m. Council Meeting.

Thursday, November 26th

11 a.m. Meeting of Sub-committee *re* Calf Husbandry and Diseases.

Friday, November 27th

10.30 a.m. Meeting of Technical Development Committee.

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Protection of Animals (Amendment) Bill

Our readers will be glad to learn that the above Bill, designed to amend the provisions of the Animals (Anaesthetics) Act, 1919, and which is the first sponsored in Parliament by the British Veterinary Association, received a Second Reading in the House of Lords on October 27th.

Lord Stamp, who had introduced the Bill, made out a very convincing case in moving that it be read a second time, and other peers from all sides also spoke in favour. Lord Carrington expressed the Government's support for the Bill in principle, though he emphasised that certain details would have to be looked into.

A full account of the debate will be published in our next issue, and how the Bill proceeds from this stage is a question that ministerial representatives will have to decide in due course. It was clear, however, that the House of Lords was of the opinion that this Bill should be proceeded with asa matter of urgency.

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PERSONAL

Births.—Arthur.—On October 21st, 1953, to Mary, wife of Harold Arthur, M.R.C.V.S., of Haywards Heath, Sussex, a daughter—Hillary Jennifer.

Miscampbell.—On October 25th, 1953, to Doris (*née* Johnson), wife of Kenneth I. Miscampbell, Driffield, a daughter.

Wilkins.—On October 18th, 1953, at the British Military Hospital, Singapore, to Peg, wife of Major Hector Wilkins, R.A.V.C., a son (Edmund Lygon).

Young.—On October 25th, 1953, at Old Court, W.5, to Olive and Michael Young, M.R.C.V.S., of 43, The Mall, Ealing, W.5, a son (Anthony Christopher Bowes), a brother for Nigel.

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Norwegian Association Honours British Veterinarians

Dr. F. Gjesdal, General Secretary of the Norwegian Veterinary Association, writes to say that at its Annual Congress, 1953, the Association awarded to their British Honorary Members, Sir Thomas Dalling and Dr. R. F. Montgomerie, the "Medal of Honour."

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Mr. Townson's Bloodhound Field Trial Success.—At the Annual Bloodhound Field Trials, held in the New Forest on October 21st and 22nd, Scarcity of Fredwell, owned by Mr. R. S. Townson, M.R.C.V.S., won both supreme awards in the Senior Stake over a three-mile course, two hours cold.

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ADDRESSES OF DISEASE-INFECTED PREMISES

The list given below indicates, first, the county in which are situated the premises on which disease has been confirmed, followed by the postal address and date of outbreak.

Anthrax:

Ches.—Brookside Farm, Pulford, Wrexham (Oct. 21).
Wilts.—Hurst Farm, Woodborough, Pewsey (Oct. 20).

Fowl Pest:

Cambs.—Nutwalk Farm, Tydd-St. Mary, Wisbech (Oct. 20).
Essex.—Hillcrest, London Road, Stanway, Colchester (Oct. 22).
Isle of Ely.—Cross Drove, North Brink, Wisbech (Oct. 21).
London.—3, Dalmeny Road, N.7 (Oct. 20).
Middx.—219, North Hill, N.6 (Oct. 22).
Norfolk.—The Rosary, Mattishall, Dereham (Oct. 21).
Northants.—Isebrook Allotments, Kettering (Oct. 21).
Somerset.—Mendip Catcott, Bridgwater (Oct. 22).
Sussex.—Ovingdean Hall Farm, and Grange Farm, Ovingdean, Brighton, 7 (Oct. 20).

Swine Fever:

Beds.—Manor Farm, Lower Caldecote, Northill, Biggleswade; 7, Beeston Green, Sandy (Oct. 21).
Cambs.—Avenue Farm, Elsworth (Oct. 23).
Denbighs.—Home Farm, Plas Power, Wrexham (Oct. 26).
Derby.—Poplar Farm, Rowarth, Stockport (Oct. 21); Top Manor Farm, Ockbrook, Derby (Oct. 23).
Essex.—Oaklands Farm, Stonesgreen, Gt. Oakley, Harwich (Oct. 22).
Herts.—Manor Farm, High Road, Broxbourne (Oct. 23); Whiting Hall Farm, Mays Lane, Barnet (Oct. 26).
Hunts.—41, London Street, Godmanchester, Huntingdon (Oct. 26).
Isle of Ely.—Hayes Farm, Ramsey Road, Whittlesey (Oct. 21).
Lincs.—Manor Farm, Gedney, Spalding; Ings Farm, Freiston Boston (Oct. 26).
Staffs.—Bowling Green Farm, Wheaton Aston (Oct. 23); Lower Bridge Farm, Hopton, Stafford (Oct. 26).
Sussex.—High Buildings Farm, Ballscross, Petworth (Oct. 21); Field Gate, Church Lane, Worth, Crawley (Oct. 23).

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OPENING OF BRITAIN'S FIRST NATIONAL PROGENY TESTING STATION

Thanks to the co-operation between B.O.C.M. and the Milk Marketing Board, this country is following the example of Denmark, where the spectacular growth and development of artificial insemination made it necessary that the breeding value of A.I. bulls should be investigated at special bull testing stations, the purpose of which is to ascertain the yield of groups of daughters of A.I. bulls under standardised conditions of feeding and management. The aim is to establish conditions at the bull testing stations which it is considered should be maintained on all dairy farms. With the enthusiastic support of the Board's technical staff, arrangements were made by B.O.C.M. for the first bull progeny testing station in England to be established at Barlby Farm, Selby, Yorks.

Thursday, October 22nd, 1953, was the opening day for the first bull progeny test ever to be conducted in this country, and the 22 breeders of the 40 heifers under test were present to see how their stock are doing and the general arrangements and results to date. At the inaugural luncheon Mr. A. E. Robinson, Vice-Chairman of the company, welcomed the owners of the stock, officials of the Milk Marketing Board and guests associated with agricultural advancement. In outlining the purpose of the test Mr. J. C. Leslie, the company's Chief Agricultural Adviser, said that the continued success of the A.I. system run by the Board depended on using bulls of high genetic value. Though bulls were chosen with great care as to their ancestry, the only real criterion was the milking performance of their daughters. At Barlby Farm great pains had been taken to ensure that housing, management and feeding were as uniform as possible.

In the year's first test, 10 first daughters of four British Friesian bulls will be recorded as groups, each group being the progeny of one sire. All have been hired from their breeders, being drawn from a big variety of farms. Thereby it is hoped that any influence of their dams and of their upbringing will be cancelled out and that any differences between groups will represent the differing values in the sires. Insemination, transport and recording are free and the farmer can have the calf returned to him, or he can sell it to the station. During the lactations milking is three times a day and the yields are weighed after each milking: butter-fat and SNF are tested weekly. Milk recording is carried out by the Board. The feeding of hay and dried sugar beet pulp for maintenance and Gold Label dairy nuts for production is rigidly controlled as to both quantity and quality by meticulous weighing in the cowshed and by frequent laboratory checks. Heifers are weighed at regular intervals and a record is kept of live-weight changes. An interesting point is that it is hoped to investigate the genetic inheritance and speed of "let down" at milking.

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ROYAL COLLEGE OF VETERINARY SURGEONS

Accessions to the Library June—August, 1953

Australia: Division of veterinary hygiene. Diseases of domestic animals in Australia, by H. R. Seddon, Part 4, Protozoan and viral diseases. Sydney: Govt. Print., 1952.

Borg, K.: On leucocytozoon in Swedish capercaillie black grouse and hazel grouse. Lund, Berlingska Boktryckeriet, 1953. 109 pp.

Dalziel, H.: The diseases of horses and their treatment. *Second edition*. London: "Bazaar, Exchange and Mart," 1922. 87 pp.

Great Britain: Ministry of Agriculture and Fisheries. Poisonous plants on the farm, by H. C. Long. *Second edition*. London: H.M.S.O., 1938. 106 pp.

Kennedy, A. H.: Chinchilla diseases and ailments. Toronto Fur Trade Journal of Canada, 1952. 259 pp.

Kral, F., *and* Novak, B. J.: Veterinary dermatology. Philadelphia: Lippincott, 1953.

Lane, C. H.: Rabbits, cats and cavies. London: Dent, 1903. 312 pp.

McFadyean, *Sir* John: Osteology and arthrology of the domesticated animals. Edited by H. V. Hughes and J. M. Dransfield. *Fourth edition*. London: Baillière, Tindall & Cox, 1953.

Millar, P. G., *and* Ras, N. P.: Manual of infertility and artificial insemination in cattle. London: Baillière, Tindall & Cox, 1952. 339 pp.

Obel, A. L.: Studies on the morphology and etiology of so-called toxic liver dystrophy (hepatosis dietetica) in swine. Copenhagen: Munksgaard, 1953. 87 pp. (*Acta pathologica et microbiologica Scandinavica, supl. XCIV.*)

Pegler, S. H.: The book of the goat. *Sixth edition*. London: "Bazaar, Exchange and Mart" (1927?). 255 pp.

Simmonds, E. B.: Cats. New York, etc.: McGraw-Hill, 1935. 209 pp.

Sisson, S., *and* Grossman, J. D.: Anatomy of the domestic animals. *Fourth edition*. Philadelphia: Saunders, 1953.

Turner, C. W.: The mammary gland, 1. The anatomy of the udder of cattle and domestic animals. Columbia: Lucas Bros., 1952. 389 pp.

Whitney, L. F., *and* Whitney, G. D.: The distemper complex. Orange, Conn.: Practical Science Publishing Co., 1953. 256 pp.

The librarian would welcome enquiries for publications, whether listed or not, as it is impossible to record here all the material received in the form of reports, periodicals, pamphlets, etc. Information regarding circulation of journals, inter-library loans and other activities of the library will be gladly supplied on request.

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STORED FRIESIAN SEMEN TO GO WITH THE BULL

In a recent issue the *Farmer and Stock-breeder* reports that, meeting in London recently, the Council of the British Friesian Cattle Society approved a ruling to the effect that on the sale or transfer (including loan) of a bull, all semen stored from the bull in deep frozen form should be transferred with it. It was felt that, were such a procedure not adopted, cases would arise where a bull might be sold time and time again, each owner retaining semen for future use, with the result that blood lines already being reduced by the widespread use of A.I. would in years to come tend to be reduced still further to a point where future breed improvement might be impaired by too close breeding.

The Council felt that the over-riding objects of all legislation controlling this new technique should be to ensure that the private breeder be given the same facilities as A.I. authorities, and that the strictest control should be maintained on collection, storage and use of semen in order to preserve the integrity of pedigree breeding.

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A panel of Swedish cattle experts has just returned to Sweden after completing the purchase of more than 100 head of pedigree Hereford cattle. The deal, which involves 100 cows and heifers and four bulls, has been made subject to the cattle passing the stringent veterinary requirements of the Swedish Ministry of Agriculture. It is understood that the cattle were bought at an average price of £150 a head, making the total paid between £15,000 and £16,000.

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The Production of Germ-free Animals

Lecture by Dr. J. A. Reyniers

The production of germ-free animals was the subject of a lecture arranged by Dr. W. P. Blount and given at a cocktail party organised by the British Oil and Cake Mills, Ltd., on the evening of Thursday, October 15th, 1953, by Dr. J. A. Reyniers. Dr. Reyniers is Professor of Bacteriology in the University of Notre Dame, South Bend, Chicago, and he was in this country for seven days, returning to the U.S.A. from attendance at the International Congress of Microbiology, Rome, where he gave two papers.

G. C. B. writes: "To those unfamiliar with the technique, the story unfolded by Dr. Reyniers in an undramatic way matched any that one associates with the production of atomic piles or the activities of a man from Mars. Above all one was especially struck by the thoroughness and patience which Dr. Reyniers has shown in carrying his technique to its present state of development.

"He has been able to rear poultry, guinea-pigs, rats, rabbits and even dogs and monkeys in germ-free conditions for periods of up to 18 months, and only lack of space has prevented him extending the lives of the experimental animals beyond this period. So delicate is the technique, moreover, that the entry of one bacterium into an animal house can upset a whole experiment. The animal houses are not those that one is accustomed to on a normal research station, but resemble large autoclaves so that food, water, air, etc., can be sterilised before it reaches the animal.

"The experiments described were first planned in 1930 and the research was envisaged first of all to cover a period of 50 years up to 1980. The first investigations were carried out in

small autoclave units, but the methods and techniques are now so elaborate that a unit of a size of 18 feet by 8 feet is used for keeping larger animals and bigger batches of animals. In this larger unit the animals have to be handled by a man in a diving suit who has passed through a formaldehyde bath before he enters the animal house proper. His movements are hampered to a certain extent by the long airline which follows him through the tank into the animal compartment.

"To many of us the first knowledge of this germ-free technique came when experiments with the antibiotics in feeding-stuffs had shown that animals reared in a germ-free atmosphere did not gain weight from the addition of antibiotics to their food. From this lecture one realises that the use of this germ-free technique for the study of antibiotics was merely a small part of general germ-free animal studies.

"The technique is being used for study of the physiology, pathology, nutrition and development of the growing animal in the absence of germs, and it was interesting to know that this work had attracted the enthusiasm of the U.S. Naval Authorities because of the difficulties they face with bacterial populations in long range submarines, etc.

"The technique is especially useful in the study of diseases which are of complicated origin, such as those that involve bacteria and protozoa, or virus and bacteria, etc. By using germ-free animals it is possible to find out if the typical clinical picture can develop in the absence of bacteria but in the presence of one of the causal factors. It has been found, for instance, that an amoebic dysentery infection cannot be produced in rabbits in the absence of bacteria, and fowl paralysis does not develop in birds which come from a strain that one would have expected to be susceptible.

"A study of dental caries has been carried out with this technique and it has been found that the disease will not occur even on caries-producing diets if bacteria are not present.

"Dr. Reyniers spoke for about one and a half hours, but in that time he was only able to touch the fringe of his work, and it was obvious that this germ-free technique will produce much information on fundamental points in animal development."

The following members of the veterinary profession were present:—

Messrs. G. C. Brander, Cooper Technical Bureau; H. E. Bywater, Veterinary Officer, West Ham Division; Dr. J. Carmichael, May & Baker Ltd.; Mr. C. V. Dayus, Agricultural Adviser, New Zealand Government; Dr. W. S. Gordon, Director, A.R.C. Field Station, Compton; Messrs. Oliver Jones, Veterinary Officer, London Zoo; G. F. Kershaw, Bayer Products; Mrs. P. M. Kon; Mr. E. C. Offord Royal Veterinary College; Mr. W. A. Pool, Director, Commonwealth Bureau of Animal Health; Dr. J. S. Paterson, Animal Farm, Porton; Mr. J. N. Ritchie, Chief Veterinary Officer, Tolworth, Surbiton, Surrey; Mr. J. Scarnell, Wellcome Veterinary Research Station; Professor N. J. Scorgie, Royal Veterinary College; Dr. A. W. Stableforth, Director of Veterinary Research, Weybridge; Dr. K. C. Sellers, Pirbright, Surrey; Messrs. J. H. Taylor, A.R.C. Field Station; A. Thomson, Glasgow; Miss O. Uvarov, Glaxo Laboratories, and Mr. A. N. Worden, Huntingdon.

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Veterinary Medicine To-day

Professor G. F. Boddie's Inaugural Lecture

Professor G. F. Boddie delivered his inaugural lecture as the first occupant of the William Dick Chair of Veterinary Medicine in the University of Edinburgh, at the University New Buildings, Edinburgh, on October 19th, 1953.

In the course of his address Professor Boddie spoke of Scotland as having been a pioneer in the campaign to eradicate bovine tuberculosis, saying (observes *The Scotsman*) that sufficient progress had been made with the Attested Herd Scheme in Great Britain to make it possible to visualise the achievement of that goal within perhaps eight or ten years. Professor Boddie paid tribute to "those far-sighted members of the farming community and persevering members of the veterinary profession who worked hard to overcome the initial difficulties in creating tubercle-free herds." He also acknowledged the great work of members of the medical profession in this connection.

The picture of animal diseases as a whole had changed considerably since William Dick's day and to some extent the changes were a reflection of progress in veterinary science. The Professor referred to some of the major contagious diseases which had been eradicated from this country, and pointed out that they were all still prevalent in other parts of the world. "It is perhaps in the virus diseases that we still have our most troublesome problems in so far as the contagious diseases of the domesticated animals are concerned."

A complicating factor in regard to the distribution of infection was the remarkable distances that animals might travel in the course of ordinary trade movements. The economics of lengthy journeys were difficult to understand, but when those journeys coincided, as they did in 1952, with an outbreak of an intensely infectious disease like foot-and-mouth disease the potential spread of infection was a very serious matter.

Other changes in animal diseases were the result of measures taken to control disease and man's endeavours to increase animal productivity, and in some instances were related to the use of potent drugs.

The importance of veterinary students being familiar with the appearance, behaviour and functional activities of animals in normal good health was emphasised by Professor Boddie. The end of horse transport and increasing mechanisation on farms reduced the new student's fundamental knowledge of his subject. Unless the students were acquainted with animals they could not detect any deviations from normal behaviour. Here was one essential difference between veterinary and medical students. "The medical student grows up with the species that will form his future patients and presumably by the time he enters a medical school is reasonably familiar with normal man. Veterinary students have not the same facilities for getting to know animals." Some country boys were strangely ignorant of animals. The reason was apparent. "The farm tractor and its associated machinery are much more attractive to youth than the mundane tedium of cleaning out the cowshed."

Professor Boddie prefaced his lecture with a tribute to William Dick and the results of his teaching. "It seems largely because of the sound clinical training they received that Dick's graduates went to found or preside over veterinary schools in other parts of the English-speaking world."

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TSETSE FLY CONTROL IN UGANDA

"By 1947 about three-quarters of Uganda's land area had become infested with tsetse fly, which carries the fatal disease of sleeping sickness to man and diseases of the nagana type to cattle, horses, sheep and pigs," observes *Commonwealth Survey* in its issue of September 11th, and continues: "The livestock industry of the Protectorate was threatened, and it was authoritatively stated that unless the fly's further advance was prevented, and some of the lost land reclaimed, there could be no economic or social future for the country. Five years later, over 7,000 square miles of this land, the target set for 1956, had been reclaimed and many other areas protected from the fly.

"Most anti-tsetse measures in the country before 1941 were undertaken for human health reasons and consisted in clearing rivers and lake shores to discourage one of the six varieties of tsetse found in Uganda. The flies' rapid spread, however, led the Director of Veterinary Services to ask for surveys of the situation; it was found so serious that efforts were promptly made to stem further advance by establishing barrier clearings and de-flying posts, encouraging the burning of grass and bush in threatened areas and organising communal hunting to clear those areas of game and so check the fly.

The Tsetse Control Department and its Work

"Notwithstanding these measures, the flies continued to advance, and in 1947 a Tsetse Control Department was created to co-ordinate and launch a counter-attack. The aim was firstly to prevent the fly advancing any further and, if this was successful, to reclaim some 7,000 square miles. The time limit was 1956.

"With the object of breaking the association between the tsetse and game and of creating conditions unsuitable for the fly, the Department set out to destroy the areas of dense tsetse occupation and to drive back the game. At the same time, bush was cleared to remove the shade the tsetse needs to rest and breed in.

Some Results

"The Tsetse Control Department's work has proved eminently successful. By the end of 1952 some 7,785 square miles, or more than the target set for 1956, had been reclaimed, and nearly 30,000 head of cattle shot.

"In northern Uganda the selected consolidation lines have been reached, and in the south-west a defence line 22 miles long and 1 5 miles wide has been firmly established. When the central line has been completed the tsetse-free and tsetse-infested country will be divided by a line, 500 miles long, running almost straight across the country from the north-west to the extreme south-west. West of this line the country will remain heavily infested as it is to-day, but to the east it will remain largely free.

"A considerable proportion of the reclaimed land is continuous with the Protectorate's densest areas of population, and parts previously denied to cattle are again open for grazing and agriculture."

AREA ERADICATION PLAN FOR TUBERCULOSIS

Statement showing the Number of Cattle in each County on June 4th, 1952, and the Number of Cattle in Attested Areas and Attested Herds on September 30th, 1953

(Counties constituting, or included wholly or partly in, an Attested Area are marked A.A.)

1. For convenience, the figures in the attached statement for the number of cattle on September 30th, 1953, in counties constituting a separate Attested Area or included wholly in an Attested Area are shown as corresponding with, instead of varying slightly from, the number of cattle on June 4th, 1952.

2. The number of Attested Herds on September 30th, 1953, was as follows :—

England	..	52,372
Wales	..	28,670
Scotland	..	26,943
		107,985

3. In addition, there were 1,705 Supervised Herds containing over 72,000 cattle. These herds need only one clear tuberculin test in order to qualify as Attested Herds.

	Total cattle, June 4th, 1952	Cattle in Attested Areas and Herds: Number	Cattle in Attested Areas and Herds: Percentage of total cattle	
ENGLAND				
Bedford	46,639	13,520	29·0	
Berkshire	90,473	55,510	61·4	
Buckingham	115,448	42,130	36·5	
Cambridge	32,540	11,320	34·8	
Isle of Ely	22,187	2,130	9·6	
Chester	242,319	76,040	31·4	
Cornwall	268,120	74,270	27·7	
Isles of Scilly ..	516	516	100·0	A.A.
Cumberland	227,896	155,590	68·4	
Derby	185,577	40,240	21·9	
Devon	404,895	140,180	34·7	
Dorset	159,494	85,290	53·5	
Durham	116,500	41,470	35·6	
Essex	126,467	58,420	46·2	
Gloucester	195,604	78,850	40·3	
Hampshire	156,605	85,770	54·8	
Isle of Wight	22,072	11,790	53·4	
Hereford	133,654	49,350	36·9	
Hertford	62,242	30,730	49·4	
Huntingdon	30,150	5,720	18·9	
Kent	122,872	49,940	40·6	
Lancaster	272,237	93,780	34·4	
Leicester	168,250	34,820	20·7	
Lincoln (Holland) ..	29,413	1,760	6·0	
Lincoln (Kesteven) ..	73,128	11,520	15·7	
Lincoln (Lindsey) ..	169,545	20,530	12·1	
London	—	—	—	
Middlesex	8,085	3,010	37·2	
Norfolk	202,389	67,800	33·5	
Northampton }	149,615	30,910	19·8	
Soke of Peterborough }	6,981			
Northumberland ..	201,442	44,350	22·0	
Nottingham	114,555	21,560	18·8	
Oxford	109,773	50,100	45·7	
Rutland	20,386	1,730	8·5	
Salop	276,262	90,200	32·7	
Somerset	321,916	146,370	45·5	
Stafford	232,043	45,710	19·7	
Suffolk, East	82,634	35,020	42·4	
Suffolk, West ..	40,377	18,200	45·1	
Surrey	54,539	29,600	54·3	
Sussex, East	107,502	43,330	40·3	
Sussex, West	79,565	40,650	51·1	
Warwick	149,494	44,350	29·7	
Westmorland	96,136	80,880	84·1	
Wiltshire	209,293	103,740	49·6	
Worcester	98,843	28,070	28·4	
York, E. Riding ..	138,832	12,620	9·1	
York, N. Riding ..	252,285	74,430	29·5	
York, W. Riding ..	342,966	102,180	29·8	
Total	6,769,056	2,385,996	35·2	
WALES				
Anglesey	54,120	19,530	36·1	
Brecon	46,455	34,330	74·0	
Caernarvon	58,768	35,930	61·0	
Cardigan	79,710	79,710	100·0	A.A.
Carmarthen	139,567	139,567	100·0	A.A.
Denbigh	101,736	50,310	49·0	
Flint	60,914	17,330	28·5	
Glamorgan	73,453	27,740	37·8	
Merioneth	40,083	33,930	84·7	
Monmouth	67,978	23,510	34·7	
Montgomery	96,249	69,210	72·0	
Pembroke	103,298	85,260	82·5	A.A.
Radnor	36,096	20,970	58·1	
Total	958,427	637,327	66·4	
ENGLAND & WALES :				
Total	7,727,483	3,023,323	39·1	
SCOTLAND				
Aberdeen	216,248	54,820	25·4	
Angus	65,432	24,140	36·9	
Argyll	60,597	49,880	82·3	A.A.
Ayr	155,152	155,152	100·0	A.A.
Banff	53,682	13,320	24·8	
Berwick	35,317	14,310	40·5	
Bute	11,398	11,398	100·0	A.A.
Caithness	26,691	9,110	34·1	
Clackmannan	4,384	3,230	73·7	
Dumfries	105,140	105,140	100·0	A.A.
Dunbarton	17,755	16,990	95·7	
East Lothian	17,168	6,750	39·3	
Fife	64,932	41,730	64·3	
Inverness	50,370	32,060	63·6	
Kincardine	39,388	10,670	27·1	
Kinross	9,294	6,040	65·0	
Kirkcudbright	76,130	76,130	100·0	A.A.
Lanark	94,305	83,850	88·9	
Midlothian	24,161	15,520	64·2	
Moray	29,128	12,240	42·0	
Nairn	8,783	4,050	46·1	
Orkney	48,379	19,550	40·4	
Peebles	11,488	10,490	91·3	
Perth	89,524	39,670	44·3	
Renfrew	30,651	30,651	100·0	A.A.
Ross-shire	38,623	18,570	48·1	
Roxburgh	36,744	16,700	45·4	
Selkirk	6,249	4,880	78·1	
Stirling	41,048	35,050	85·4	
Sutherland	9,068	6,880	75·9	
West Lothian	16,037	10,880	67·8	
Wigtown	75,363	75,363	100·0	A.A.
Zetland	7,021	7,021	100·0	A.A.
Total	1,575,650	1,022,235	64·9	
GREAT BRITAIN :				
Total	9,303,133	4,045,558	43·5	

CORRESPONDENCE

The views expressed in letters addressed to the Editor represent the personal opinions of the writer only and their publication does not imply endorsement by the B.V.A.

XENOPHON AND VETERINARY HISTORY

Sir,—Could any member give me an idea as to what contribution, if any, the Greek General Xenophon made to veterinary history? I have been under the impression that there were extant some writings of his on the care of horses in the field, especially the treatment of the unshod hoof,* and until recently I had attributed to him the proverbs "Show me a horse and I know his master," and "The eye of the master makes the strong horse." I have, however, just read a most interesting translation of the Anabasis (Penguin series) and can only find casual references to horses, such as gifts, plunder and the possible use of baggage animals for cavalry. My encyclopaedia does not mention any other of his works that are at all likely to deal with horses.—Yours faithfully, "CONSTANT READER."

[* I seem to recollect the late Professor Edwards telling us this at a meeting of R.V.C. Veterinary Medical Association, but I may be wronging him.]

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R.C.V.S. ANNUAL FEES

Sir,—In your columns Messrs. Fox & Parker have expressed their surprise at the apathy of the profession in regard to the above; and I am writing to ask why a veterinary surgeon on retiring from *general* practice should have to sell his birthright for a mess of pottage. For the dubious privilege of having his name retained on the Register with two strokes after it, he can have a reduced subscription *but* he must not, under dire penalties, call himself a veterinary surgeon or retain the M.R.C.V.S. after his name or use it for gain or profit. *Why?* Surely this should not apply to a man who has borne the heat and burden of the day and in the sunset of life gives up general practice, but feels to keep his interest in life and without injuring anyone else, he can still do a little consulting and honorary work or even relief or light work. Why should he not? Medical men and retired service officers retain their rank and privileges. I hope abler pens than mine will come into action and as I was born north of the Tweed I lay myself open to the usual gibe; so I enclose my card and sign myself "INQUIRER."